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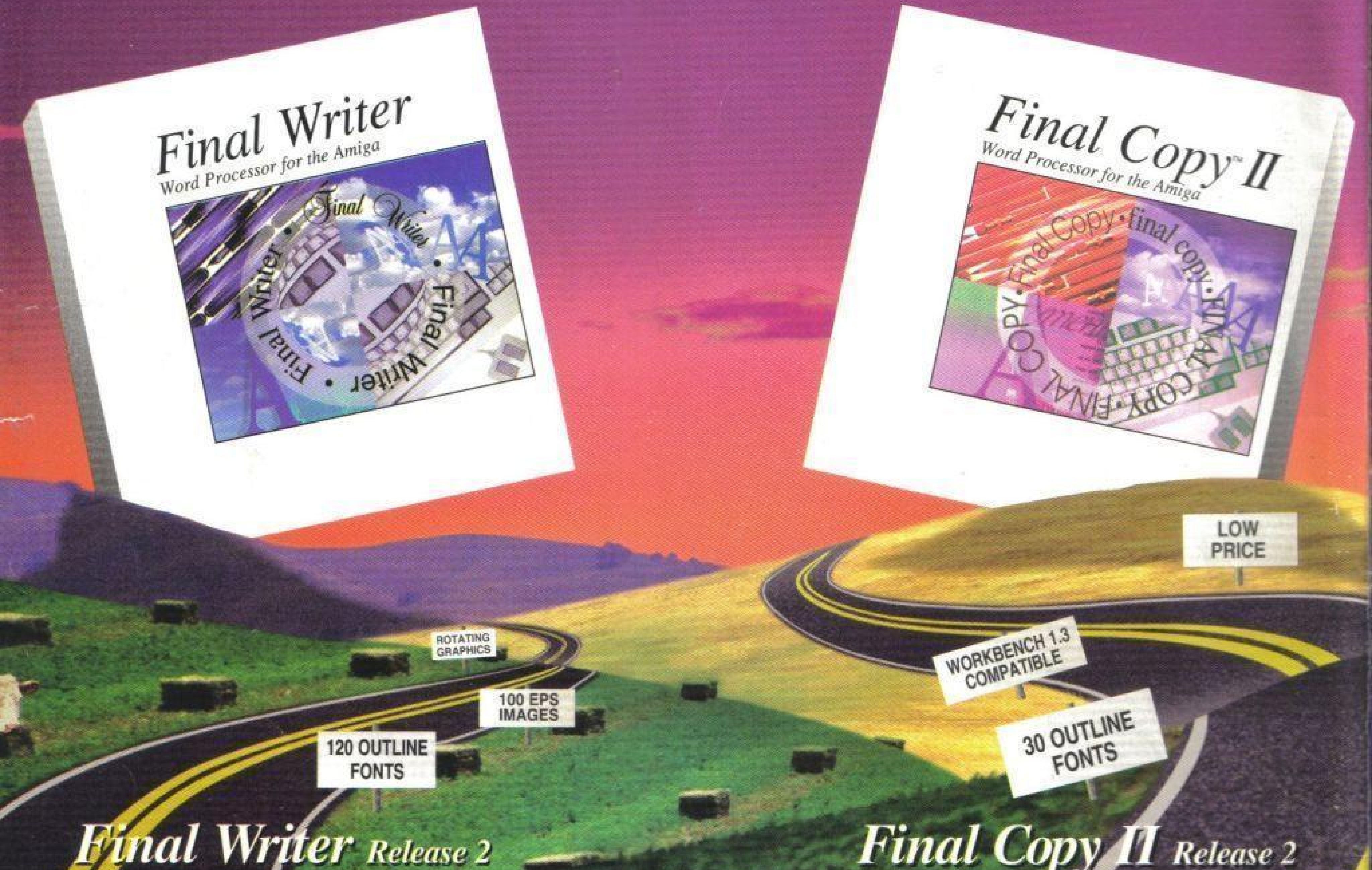
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FIRST IMPRESSIONS

Waiting for . . .

If you've been calling the office recently for updates on the Commodore situation, I know that you—like us—are playing the waiting game. (And if you haven't, the hotline to *AW* is 1-800-441-4403 and ask Liz for the Commodore update message.)

It's not that the waiting is uneventful. As we were going to press, the Commodore hearings resumed in the Bahamas and a few more pieces of the puzzle began to fall into place (see "Overscan," p. 8, for the latest info—reported directly from Nassau by *AW*).

It's a shame, though, that this legal circus, up to this point, hasn't been taking place in the US. At least we could be entertained while we wait for results. Think of it: live court-side proceedings aired on the networks each day from 10 AM to 2 PM, followed by commentary on PhilMauryOprah in the afternoon, capped off with Ted baiting the principals on Nightline and some final late-night jokes from Dave and Jay. ("Hey, what do Commodore Peary and Commodore Business Machines have in common? One discovered the North Pole and the other ran its marketing operations there.")

Okay, enough of that. I know at times this summer it seemed that we were the audience in a Samuel Beckett play—waiting for Godot or Garbo or Groucho or somebody to walk on and resolve things. But the waiting should be over with soon. As we learned from our trip to Nassau last week, bids from at least a half-dozen players to acquire Commodore were on the table. Obviously, there's something of value here in the Amiga line and the dedicated Amiga user base. And from every indication we could track, a resolution to Commodore's mess is forthcoming.

So, let's get ready to welcome the new force in the Amiga community—whomever it turns out to be—and encourage these folks to ramp up production of more AGA machines, more CD32s, and anything else they can get into the pipeline. And that'll be the best incentive to spur the third-party developers to keep cranking out new software and peripherals. Despite being frustrated about delays and legal wrangling, I'm really delighted that multiple bids to acquire Commodore were on the table as this issue was going to press.

My main advice to all these folks, however, is this: Take this thing seriously, and if you don't, then don't get in the way. You're a part of the solution (great) or a part of the problem (zip up your wallet and walk). This waiting period will soon be over. We've got work to do, damage to repair, and (as another resident of New Hampshire might have said) the Amiga still has plenty of miles to go before it sleeps.

Daniel Sullivan

Daniel Sullivan
Editor-in-Chief

AmigaWorld

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AmigaWorld (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by TechMedia Publishing, Inc., an IDG Company, 80 Elm St., Peterborough, NH 03458. US subscription rate is $29.97, one year; $57.97, two years; $83.97, three years; Canada, $41.97 (includes GST), and Mexico $38.97. Foreign Surface $49.97. Foreign Airmail $84.97. US funds drawn on US bank. Prepayment is required on all foreign subscriptions. All foreign rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100. On-line on BIX: Amiga.World (in Amiga.exchange); CompuServe: 76376,2137; Portal: Go AmigaWorld. Entire contents copyright 1994 by TechMedia Publishing, Inc. No part of this publication may be printed or otherwise reproduced without written permission from the publisher. **Postmaster:** Send address changes to *AmigaWorld*, Subscription Services, PO Box 595, Mt. Morris, IL. 61054-7901. Nationally distributed by Kable News Co. *AmigaWorld* makes every effort to ensure the accuracy of articles, listings, and diagrams published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions. PRINTED IN THE USA. Posted under Canadian International Publication agreement # 0257478.

CONTENTS

VOLUME 10, NUMBER 8, AUGUST 1994

FEATURES

SIX DEGREES OF PRESENTATION
By Geoffrey Williams **16**
What are the state-of-the-art features that distinguish Amiga multimedia software? And how well do six leading programs make use of those features in creating the presentations you require? Read and compare.

THE AMIGA USER'S MAC SURVIVAL KIT *By Denny Atkin* **22**
AW's two-part guide to cross-platform computing switches to the Macintosh this month. We'll show you everything you need to know to make Amigas and Macs work together productively—with practical advice and product recommendations.

ARTICLES

AREXX: ELECTRONIC GINSU—PART TWO *By Sheldon Leemon* **27**
Our hands-on, layman's guide to ARexx concludes with examples and sample scripts that show you how to control and integrate your applications more effectively.

SOUND LEGAL ADVICE
By Geoffrey Williams **31**
Need to incorporate sound and music in your multimedia/video presentations? Here's a comprehensive guide to finding sources and arranging copyright permissions for acquiring the material you need.

COLUMNS

DENNY ON DOS *By Denny Atkin* **4**
More from the master of AmigaDOS as Denny's new column continues this month with hints and tips on "dealing with disks."

PRIME-TIME PD *By Tim Walsh* **6**
With scads of recent online activity concerning Commodore, Tim shows you how to navigate each of the major networks if you're searching for news, views, or just a little company in these troubled times.

ACCENT ON GRAPHICS
By Joel Hagen **34**
If you're new to 3-D graphic arts, you may do well to follow Joel's advice about avoiding familiar representational objects and starting with abstract sculptures instead.

The Amiga still retains its cutting-edge position at the forefront of desktop multimedia because the latest Amiga programs represent the state of the art in presentation software—p. 16.

VIDEO IN FOCUS
By Paulo de Andrade **44**
This month's installment of our new video column offers practical advice and low-cost solutions for making your video-production work pay off with prospective clients.

DEPARTMENTS

FIRST IMPRESSIONS
By Daniel Sullivan **2**
What's going on down there in the Bahamas? And how will the Commodore mess most likely be resolved?

OVERSCAN **8**
News and new products from all over the Amiga community.

HELP KEY **76**
If system problems are making you tired and poor, give Tim your technically muddled impasses.

***AW* PRODUCT INFORMATION**............... **74**
To contact the vendors of products mentioned in this issue of *AmigaWorld*, consult our all-in-one "Manufacturers'/Distributors' Addresses" list.

LIST OF ADVERTISERS **78**

THE LAST WORD **80**
Fellow readers vent on the Commodore mess and other issues, too.

REVIEWS

A-MAX IV *(ReadySoft)* **10**
The new Mac emulator is more powerful and chockful of options than its predecessors.

AMIVR AND STEREOPRO
(MegageM) **12**
Two pairs of liquid-crystal shutter glasses for realistic 3-D viewing.

STUDIO16 3.0 *(SunRize)* **12**
Powerful software upgrade for SunRize's AD516 and AD1012 sound-sampling cards.

TRAPFAX *(Expert Services)* **14**
Serviceable fax-modem software.

SWIPES! AND TOASTERFX
(Byrd's Eye) **14**
Two Video Toaster utilities for enhancing digital-video effects and adding ImageFX compatibility, respectively.

SAMPLE WRENCH 2.1 *(dissidents)* .. **48**
Pro-quality 16-bit MIDI sample editor.

TRANSITION
(DarkSoftware / Better Concepts) **50**
Limited, low-cost image-conversion software.

GAMES

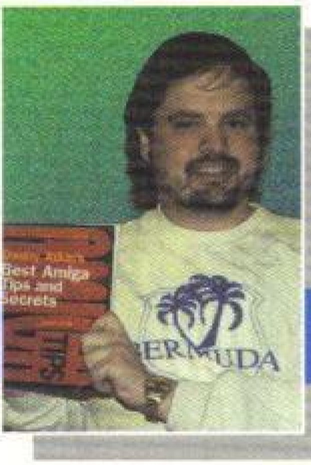
By Peter Olafson

BENEATH A STEEL SKY
(Virgin UK) **54**
The ultimate in graphics-adventure games.

SHORT TAKES **54**
Capsule reviews of new Amiga games.

***SPECIAL REPORT*: AGA GAMES IN THE PUBLIC DOMAIN.** **58**
PD games for AGA Amigas are finally beginning to surface. Here's a sampling of the new offerings.

COVER BY JACK HARRIS / VISUAL LOGIC



Denny on DOS

HINTS & TIPS FOR MASTERING THE OPERATING SYSTEM

By Denny Atkin

#3—Dealing with Disks

Disks are the Rosetta stone of computing. Without permanent disk storage, all your hard work would disappear every time you hit the Off switch. Computer novices often confuse the amount of disk storage with the amount of RAM in their system—an easy mistake to make, for both are measured in kilobytes (1024 bytes) or megabytes (1024 kilobytes, or over a million characters).

Let's look at some Amiga disk-format basics to see how you can maximize operations on your system.

Fun with Formats

The Amiga uses a very reliable and space-efficient method of storing data on disks; the disk format allows storage of 880K (or 1760K) on floppy disks, versus the 720K (or 1440K) allowed by MS-DOS computers. Unfortunately, the original version of this format traded speed for safety and storage. Reading a floppy-disk directory was unbearably slow under early versions of AmigaDOS, and when the first hard drives were released, they weren't dramatically faster than the floppies that they supplemented.

AmigaDOS 1.2 sped things up a little, but it was the FastFileSystem (FFS) added in DOS 1.3 that gave hard drives a real speedup; AmigaDOS 2.04 gave us the ability to use the FFS for floppies. As an added bonus, FFS uses all 512 bytes of a data block to store data, which gives a full 880K on a floppy, versus the 837K available in the original file system.

AmigaDOS 2.1 added the International format, which properly sorts filenames even when they contain special characters. Then AmigaDOS 3.0 brought more improvement by adding to the file system the new DirCache option, which directly addressed the slow directory-reads associated with Amiga floppies by caching directory information for quick access. (Note that selecting DirCache auto- matically selects the International mode as well.)

Quick Tip

If you install your own hard disk in an A1200 or A4000, you may find that some programs won't work on FFS disks. This is due to a bug in the firmware of many IDE hard drives that causes problems when the Amiga tries to transfer large files. To fix this, load HDToolBox and select Partition Drive, followed by Advanced Options. Click the Change gadget and then change the value in the MaxTransfer gadget to 0x1ffe0. Select OK twice and exit HDToolBox. Now you can reinstall the problem programs and they'll work fine.

If you're running AmigaDOS 2.1 or later, you have an additional option: the CrossDOS file format, which is identical to that used by MS-DOS computers. This format should be used only for data that you intend to transfer to a PC or Macintosh, as it has a number of limitations—not the least of which is a filename limit of eight characters plus a three-character extension. We'll take a look at CrossDOS in depth in an upcoming column.

Formatting for Compatibility

So which disk format should you use? In almost all cases, you'll want to use the FastFileSystem for hard drives, as it dramatically increases performance. Choose the International option if you want to use foreign characters in your filenames, but you'll maintain compatibility with older disk utilities if you forgo it. I wouldn't suggest using the DirCache option on your hard drive, as directory scans are plenty fast on hard disks anyway, and DirCache can actually slow down some hard-disk operations.

What about floppies? If you're creating a disk for wide distribution, such as for copying at a users' group, you'll want to choose the original file system, which can be read by any Amiga running any version of the operating system. But if the disk is for use only by you or folks using the same (or later) version of the operating system, go ahead and choose the FFS and DirCache options if they're available under the version of the operating system you're using.

For recoverable RAM disks like RAD:, using FFS will buy you only a small speed increase, but it's worth using because of the 5% increase in storage over the original file system.

Command Syntax

To see which file-system options are available on your Amiga, type FORMAT? and hit Return. Under AmigaDOS 3.0, which has the most options, you'll see

```
DEVICE=DRIVE/K/A,NAME/K/A,
  OFS/S,FFS/S,INTL=INTER-
  NATIONAL/S,NOINTL=NON-
  ITERNATIONAL/S,DIRCACHE/S,
  NODIRCACHE/S,NOICONS/S,
  QUICKS/S:
```

To abort the format, simply press Enter. The minimum syntax for the command is

```
FORMAT DRIVE df0: NAME
  "Diskname"
```

This will format a disk using the default OFS (Original File System). All you need do is add the FFS, INTL, and DIRCACHE options to the end of the command to specify a different format. Moreover, NOICONS causes the disk to be formatted without a Trashcan icon and directory.

For example, to format a drive using the FFS and DirCache options, with no Trashcan drawer, type

```
FORMAT DRIVE DF0: NAME
  "Diskname" FFS DIRCACHE
  NOICONS
```

You can use a final option, Quick, when you're reformatting a previously formatted disk. In addition to being much faster, it's a bit safer to use, as you can recover data from an accidentally quick-formatted disk by using disk utilities such as DiskSalv or Ami-Back Tools. ■

Denny Atkin is an editor at ***OMNI Magazine*** *and the author of* ***Denny Atkin's Best Amiga Tips and Secrets****. You may send your comments and suggestions via e-mail to DennyAmiga@aol.com.*

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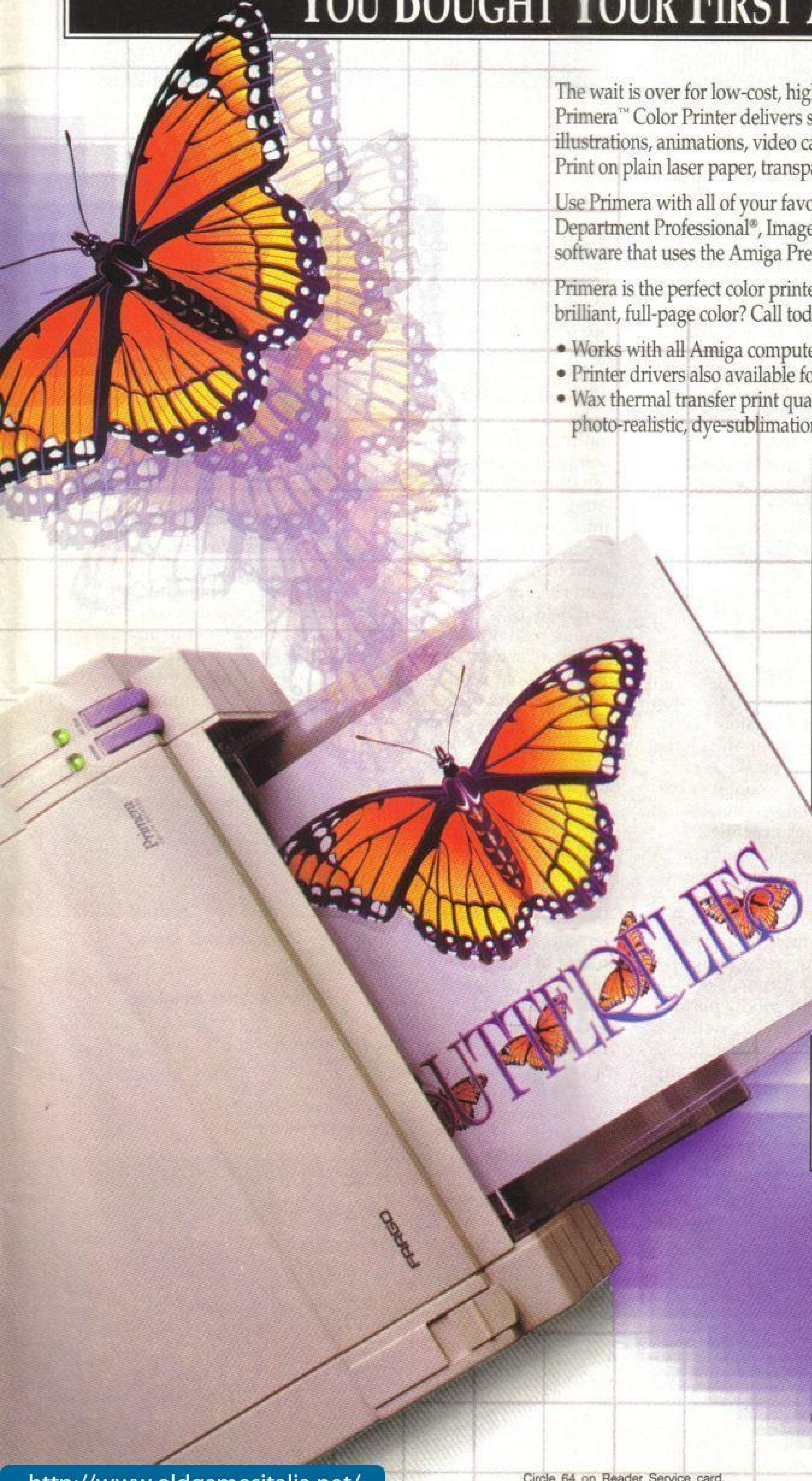

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ONLINE SOURCES FOR FREELY DISTRIBUTABLE SOFTWARE

By Tim Walsh

If Commodore's announcement of voluntary liquidation ignited sparks of concern among Amiga users, it's the many messages of Amiga users that have fanned the flames of network activity. If nothing else, the turmoil at CBM has succeeded in bringing the Amiga community closer together—unity in adversity. While much of the Amiga-specific dialog consisted of rumor and speculation, the experience of sharing it has served an important purpose.

The many sysops who maintain the Amiga areas on the nets, however, deserve praise for generally keeping items of substance isolated from rumors—not an easy task. Hard facts concerning the fate of the computer are as rare as a tasty meal at a burger joint. (See p. 8 for the latest information *AW* has gathered at press time.) Many messages have been posted by companies committed to supporting the market—a useful and positive gesture.

One thing's for certain: Whether rumor or fact, all these messages make for great reading, and there has probably never been a better time for using your Amiga to access a net.

ALL (NOT) QUIET ON THE AMIGA FRONT

We all may know more about the CBM situation by the time you read this; meanwhile, I'll list specific gathering points on the nets where you can soothe your anxieties.

The developer's long-time favorite, BIX, provides an interesting series of Amiga areas. A quick visit to a number of the developer areas—such as amiga.dev, amiga.cert, and amiga.com— reveal information not readily available elsewhere. Some of the messages found in these areas are from former Commodore insiders and commercial developers, and are certainly worth reading.

CompuServe's gathering point of choice has been the AmigaUser forum, under menu selection 3, entitled "Hot News and Rumors." The many sysops in the User forum ensure that when an official announcement is made, you're most likely to see it there first. Most of the folks who frequent the forum know that, and I'm no exception to the rule, since it's where I check in when someone asks me for the latest Amiga news scoop. It's clear why AmigaUser ranks as the most popular of the four Amiga-specific forums on CIS.

Delphi's Amiga areas are not nearly as lively (or as aggressively maintained) as those of most other networks, but its access to the Internet's Aminet site affords it a goodly portion of the Commodore chit-chat. With few exceptions, however, the information that's posted there is previously published news gathered from other sources such as CompuServe.

Next on the list, Portal gathers all the timely information from the Comp. Sys.Amiga area on the Usenet and posts it for all to read. It's an effective system, broken down into 18 directories for quick reference, and has worked well for quite some time. Elsewhere on Portal, there's an Amiga-specific general Q&A area with a subarea entitled "Pssst...Rumors" that posts some factual information, but most of what you find there concerning the Commodore situation originates elsewhere.

No discussion of Amiga gathering places would be complete without a mention of GEnie's efforts to keep Amiga users united and informed in their time of need. You may, however, want to brace yourself for a wild ride; as there are long commentaries from many commercial developers and writers of stature in GEnie's Bulletin Board Category 15.

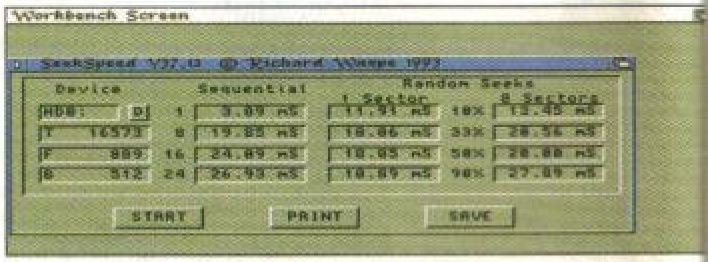
A visit to this corner of cyberspace reveals daily postings from former Commodore employees (including GEnie's own Amiga Roundtable sysop), industry notables, and an occasional magazine editor. The dialog runs rampant here, but it's the interactive, personally involved nature of these "assorted ramblings" that distinguishes this Amiga area from the pretenders. There are so many long message files, in fact, that chief sysop Deb Christensen had to perform several excisions to remove overstuffed topics and replace them with clean ones.

Whether you choose BIX, CompuServe, Delphi, GEnie, or Portal as your resource of Amiga news, you really can't go wrong. Each serves as a users' group of sorts, a place that'll make you feel better to know you're not alone.

ROOM FOR ONE

Let's see if I can squeeze in an online file tidbit in the remaining space. Most Amiga users turn to that old standby, DiskSpeed, when they need to measure storage device performance.

An alternative program worthy of consideration has been out for quite some time: SeekSpeed V37.12 by Richard Waspe. Unlike data-transfer programs such as DiskSpeed, SeekSpeed measures the seek and read times of most storage devices by performing a series of tests. It opens an attractive interface on the Workbench and makes a nice complement to any collection of disk utilities, including DiskSpeed. Give it a try the next time you need to measure disk performance.



```
Device          Sequential         Random Seeks
                                  1 Sector         8 Sectors
HD0:     D   1   3.09 mS       11.91 mS   10%   13.45 mS
T    16573   8  19.85 mS       18.06 mS   33%   20.56 mS
F      889  16  24.09 mS       18.05 mS   50%   20.88 mS
B      512  24  26.93 mS       18.09 mS   90%   27.09 mS
```

SeekSpeed's disk stats.

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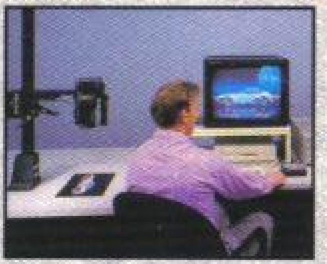

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Allows the use of DCTV with standard RGB monitors (1084) in standard NTSC or PAL modes. Also permits the use of external genlocks like our SuperGen.

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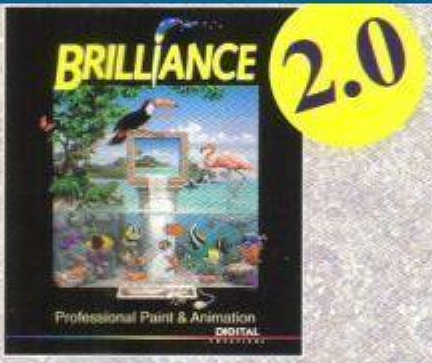

ANNOUNCING BRILLIANCE VERSION 2.0

Version 2.0 of Brilliance has been designed with productivity in mind. Several new features enhance this already powerful program. Features like *Flip Frames* that allows the animator to flip through drawings, *Rub Thru* that makes compositing easier. *Load and Save Tween paths* enabling much longer and repeatable brush moves. Faster and more accurate Tweening. *True View* option for magnification. And much, much more.

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Break The One Video Slot Barrier!

Video Slot Box

NEW!

INCREASE PRODUCTIVITY!

• Four Video Slots! • Three PC/AT bus slots (power & ground only) • 230W switching power supply • Two 5.25" drive bays • One 3.5" drive bay

The Video Slot Box is a revolutionary new mini-tower that expands any Amiga A2000, A3000, or A4000 to have four complete video slots, three additional PC AT bus slots (Power and Ground only) for compatible cards such as our Kitchen Sync TBC, room for two 5.25 inch half height devices and one 3.5 inch device (You can use this room for SCSI hard drives, optical drives, flopticals, tape drives, or anything else that fits.), and a beefy 230 watt switching power supply.

The Video Slot Box provides these solutions:

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The slots in the Video Slot Box are complete video slots with all the capabilities of the video slot within the Amiga. You can place up to four video slot products into the Video Slot Box. A front panel selector lets you choose which product is actually in control of the video slot within the Amiga.

With products that are "video slot masters" such as the Video Toaster or a genlock, only one of them can be active at a time. The video slot box allows you to easily switch instantly between several such products within one machine without having to ever swap boards. And switch them with software!

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Circle 16 on Reader Service card.

OVERSCAN

BIDS ON THE TABLE FOR COMMODORE?

NASSAU, THE BAHAMAS—In a closed-door session of the Bahamian Supreme Court, proceedings for the liquidation of at least parts of the Commodore operation resumed on Thursday, June 9. While the press was barred from these hearings, an *AmigaWorld* reporter present in Nassau, Tim Walsh, was able to gather the findings presented below. As further details become available, *AW* will report them in next month's issue and post them both online and to our special telephone hotline (1-800-441-4403).

During the last week of May, it was reported that negotiations were under way between Commodore and the Korean electronics giant, Samsung, about the acquisition of Commodore as part of the liquidation settlement. A temporary postponement in those proceedings was announced several days later. New hearings were convened on June 9, at which time a number of bids (perhaps a half dozen or more) regarding the acquisition of Commodore reportedly were tendered. Whether or not Samsung was one of the parties involved was not clear as of this writing. Legal constraints concerning the proceedings at the current time prevented our sources from revealing the identity of any of the bidders.

AmigaWorld, however, was able to speak with the trustee appointed by the Bahamian Supreme Court to administer Commodore's liquidation, as well as with representatives of several "interested parties" in the proceedings. Indications seem very clear that liquidation will now proceed "at full speed" and a resolution is imminent. *AmigaWorld* expects that a decision in the matter—announced in the US, not the Bahamas—will likely be made by the time you read this.

Meanwhile, Commodore's wholly-owned subsidiaries in Canada and throughout Europe report strong sales of existing Amiga stock—as do major Amiga distributors in the US, including Creative Computers and Creative Equipment. A polling of Amiga third-party-developers also revealed that most companies were willing to "sit tight" while the situation was being resolved.

Again, as further developments in the situation may have taken place after this issue went to press, please check with our hotline number (1-800-441-4403—ask for extension 365 or the "Commodore update line"—for new information). And look for a follow-up on events concerning Commodore and the future of the Amiga in this space next month.

—DS

OVERHEARD

MediaPoint International is now the sole distributor of **MediaPoint** multimedia package. Formerly, Activa International distributed the product. Contact MediaPoint International at Nieuwendam 10, 1621 AP Hoorn, The Netherlands; 2290-17638 (phone).

CAUTION: MAC CROSSING

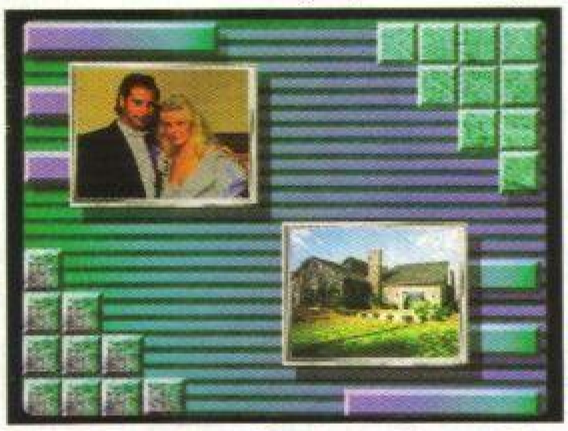
Just as our Mac emulation article, "The Amiga User's Mac Survival Kit," (see p. 22) was going to press, we received word of a new software link, **CrossMAC** ($149.95) from ***Consultron***.

If you have an Amiga high-density drive, you can access 1.44MB Mac high-density floppies with CrossMAC. You can also access A-Max- and Emplant-formatted disks (with no additional hardware) and 800K low-density Mac disks with an emulation card.

CrossMAC can be configured to access virtually any Mac storage device that can plug into the Amiga (SyQuest or Bernoulli drives, Mac CD-ROM drives, and A-Max partitions). It requires AmigaDOS 2.0 or later. (RS# 131.)

PERFECT PRESENTATIONS

Do your multimedia presentations lack polish? **Composite Studio** ($199.95, ***Dimension Technologies***) can help you get in the right "frame of mind." With the image-compositing program, you can take control of ToasterPaint or OpalPaint to combine, resize, and arrange Framestores and RGB frames into an attractive presentation. Its Power Templates function lets you select from about 40 pre-defined templates, which you can tailor to your needs (or use to generate new ones). You can also create custom elements such as beveled bars or lower-thirds. Choose from about 20 different styles (including antique, marble, silver, or wood) to frame your images. Ten textures and fills are included to add to the background, foreground, or custom-designed elements. (RS# 128.)



Create a multimedia photo-album with Composite Studio.

To locate the vendors of products mentioned, see the "Manufacturers'/Distributors' Addresses" list on p. 74.

http://www.oldgamesitalia.net/ http://www.oldgamesitalia.net/

News and New Products

DESIGNER HOME

You can build your dream house with help from ***Amprodex's*** new 3-D object collections for LightWave: **Homes** ($99.95) and **Interior Design III** ($49.95).

Homes consists of four models of houses, each of a different style (one-story, traditional, lakeside, and ranch), complete with exteriors, interiors, and movable doors and windows. But, what's a house without furnishings? Interior Design III can outfit your model homes' offices with more than 50 furniture objects including, shelves, computers, bookshelves, desks, file cabinets, and more. Earlier sets in the Interior Design series offer objects for living rooms, bedrooms, dining rooms, kitchens, and bathrooms. In addition, the Interior Construction collection features light fixtures, doors, windows, stairs, and more. (RS# 130.)

LIGHTWAVE STANDS ALONE

For animation buffs who like their software plain white rather than toasted, **LightWave 3D** (formerly only available bundled with ***NewTek's*** Video Toaster) now comes in a stand-alone version ($695). The new package (incorporating the LightWave Modeler module) offers users a complete 3-D modeling, rendering, and animation system—without the Toaster "dongle." (RS# 120.)

OVERHEARD

Amiga artists, the 3D Holo-Art competition wants you. The 24Bit Club in association with Munday Spacial Imaging is looking for original 3-D images created on the Amiga. The grand prize: Your image will be transformed into a full-size glass plate hologram! For an entry form and contest rules, send a self-addressed stamped envelope to 3D Holo-Art Competition, 24Bit Club, 6 Skirsa Square, Floor 1, Glasgow G23 5DW, Scotland.

UPDATE SCAN

If it's time to retire your Mega-Midget Racer accelerator from ***CSA***, don't throw it away! CSA is honoring trade-ins of the older boards for discounts on some of its faster accelerators, such as the 40/4 Magnum, Twelve Gauge, and Derringer 030.

MacroSystemUS (RS# 127) has discontinued the distribution of products from MacroSystem GmbH in Germany, including the Retina, VLab, Toccata, and Wolf Faust's Studio printer drivers. (All of those products have been picked up by ***NoahJi's***; 303/499-1975.)

Support will still be provided to registered owners (upgrade inquiries, however, should be directed to NoahJi's). MacroSystemUS continues to distribute TVPaint, MultiFrame-ADPro, MultiLayer-ADPro, and MultiLayer-IMFX.

Check out the latest series of textures from DRÉ F/X. The Vargas Collection on CD-ROM ($329) consists of about 350 24-bit backgrounds and textures for use in 3-D animations and video presentations. (RS# 129.)

Editor's Note: In our last issue, we omitted the address of MacroSystemUS, also the distributor of Sparks, a LightWave utility, which was featured in "Reviews." The address is 24282 Lynwood, Suite 101, Novi, MI 48374; 810/347-6266.

MIRROR, MIRROR

Who's the fairest of them all? The **Image Mirror** ($113), perhaps. ***Seven Seas Software's*** new image processor and special-effects generator lets you produce frames for animations and provides a storyboard-preview mode. It also offers background textures; montage and collage capabilities; hi-res zooms, fades, and dissolves; plus chroma keying and a whole range of manipulation effects, including Mandlebrot distortions, flips, warping, tiling, and more.

The program's drag-and-drop interface lets you process multiple images at the same time. The Image Mirror lets you alter images incrementally, and saving a customized effect is simple.

Besides 24-bit (including printing) and AGA support, the product works directly with Centaur's OpalVision and NewTek's Toaster. It requires 2MB of RAM and Workbench 2.0 or later. (RS# 122.)

STEREOSCOPIC SOFTWARE

MegageM has developed the ideal match for its **AmiVRPro** headset—SPXPro/SPXSync. The software lets you use two Amigas to drive a 3-D display like the VRPro. Any two Amigas will do—connected via their joystick ports—they don't even have to be the same model or CPU speed. One Amiga creates the right-eye view, while the other generates the left-eye view.

The SPXSync interface ensures that as a slideshow or animation is displayed, both machines stay in sync and display the proper frames to maintain the 3-D image. SPXSync is essentially an inexpensive parallel-processing solution to the problem of creating fast, fluid 3-D animation and it's the first of its kind that I've seen.

SPXPro is the dual-Amiga version of AmiVR's SPX software. AGA-enhanced with about 60 additional commands, SPXPro can run a slideshow of IFF images, load color palettes, and rotate 3-D objects, in addtion to providing all the features of the existing SPX language that ships with AmiVR and StereoPro systems (see review on p. 12). (RS# 126.)

—Dave Johnson

POWER NETWORKING

Joining the ranks of the computer professional? Remember this bit of career advice: Networking is the key. **CSANET** ($199) is ***CSA's*** inexpensive Arcnet networking solution, which claims to operate ten times faster than ParNET or AppleTalk. It was developed in conjunction with Interworks, (maker of ELAN-DFS Ethernet software), which will provide any software upgrades. CSA's Twelve Gauge or 40/4 Magnum accelerators can be upgraded to use the package. In addition, A2000, A3000, and A4000 users who don't own the accelerator boards can access CSANET with a Zorro slot board from CSA. (RS# 121.)

REVIE

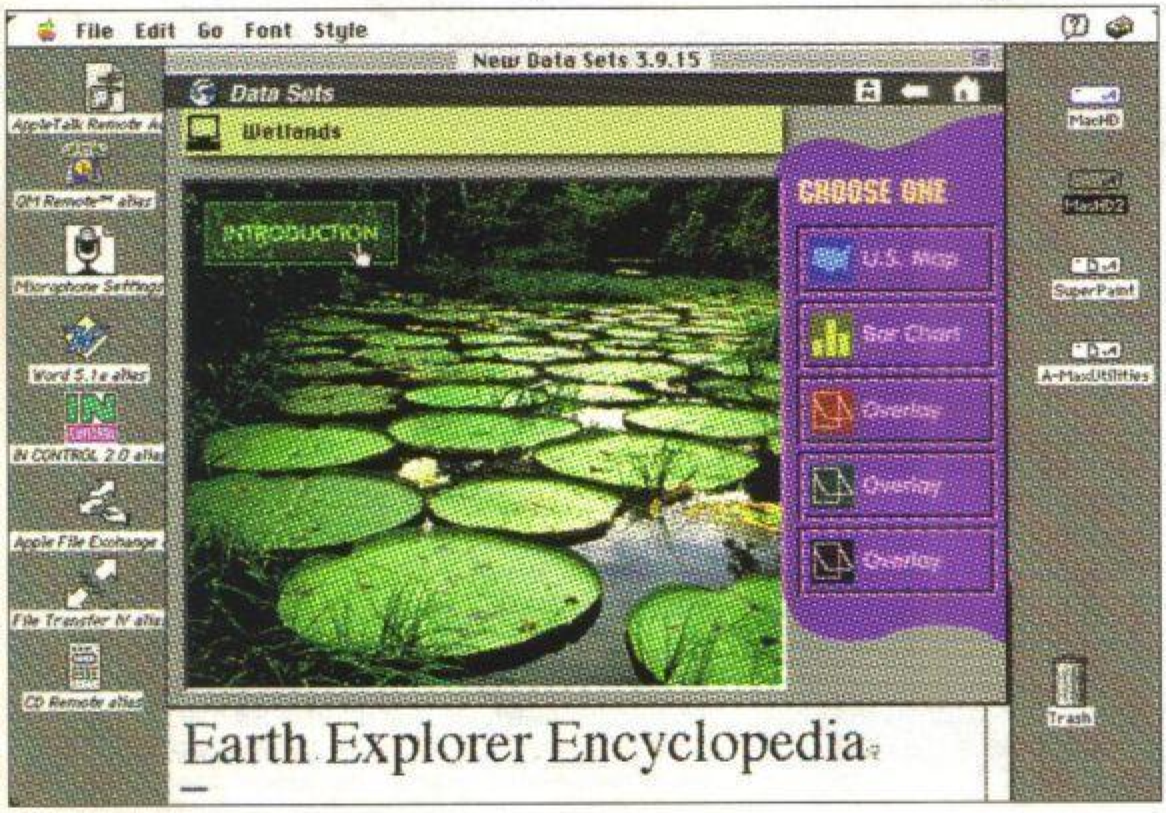
Multitasking Macintosh-emulation system.

A-MAX IV

ReadySoft, $495.95 ($119.95 upgrade from A-Max II+).
A2000, A3000, A4000.
2.1/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Installation: Easy.
Minimum system: 4MB fast RAM, accelerator, hard drive, Apple Macintosh 128K boot ROMs.
Recommended system: 8MB RAM, high-density floppy drive, 24-bit display card, A-Max MIDI cable.

As the first Macintosh emulator for the Amiga, ReadySoft's original A-Max broke new ground. By using 128K Mac ROMs, A-Max allowed a stock Amiga to emulate a monochrome Mac system, at a slightly faster-than-stock clip.

A-Max IV, which represents ReadySoft's efforts to stay ahead of the curve of evolving Mac technology, now offers multitasking and color, but still uses the cheaper 128K ROMS.


File
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New Data Sets 3.9.15
Data Sets
Wetlands
INTRODUCTION
CHOOSE ONE
U.S. Map
Bar Chart
Overlay
Overlay
Overlay
AppleTalk Remote A
QM Remote™ alias
Microphone Settings
Word 5.1a alias
IN CONTROL 2.0 alia
Apple File Exchange
File Transfer IV alia
CD Remote alias
MacHD
MacHD2
SuperPaint
A-MaxUtilities
Trash
Earth Explorer Encyclopedia

A Desktop on your Workbench: A-Max IV brings wondrous Mac software to your Amiga in a refined manner.

MIXING MACS AND AMIGAS

If you buy the complete system, you get an A-Max card with two serial ports that support modems, printers, or MIDI (with a special MIDI cable from ReadySoft). You can access peripherals on the Amiga serial and parallel ports, as well, so you can use your Amiga printer and modem on the Mac side and still leave the A-Max serial ports free for MIDI. Keep in mind that AppleTalk Remote Access requires you to connect the modem though the A-Max side and not the Amiga side. Printers still require printer drivers, but the Mac offers a full range of commercial and PD drivers. Amigas equipped with SANA-II-compatible networking cards should work fine with Mac LocalTalk or EtherTalk.

To locate the vendors of the products reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 74.

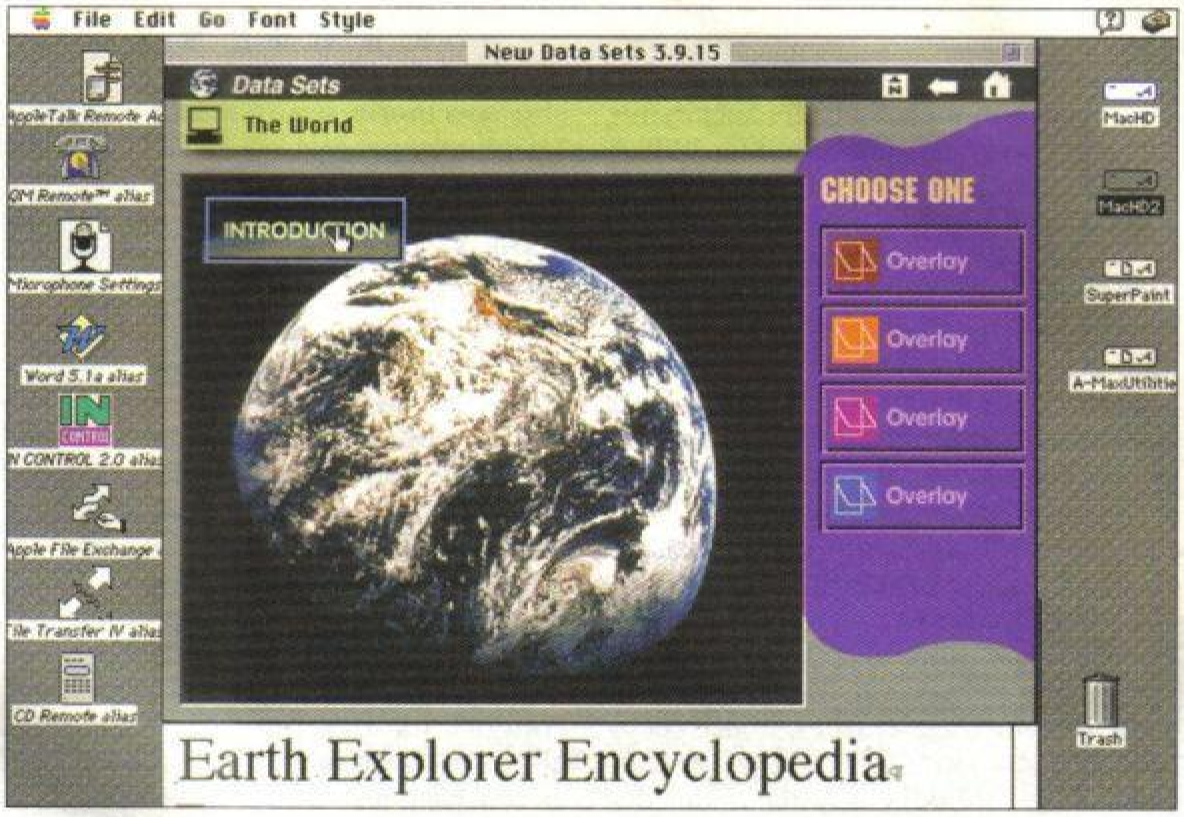
If you upgrade from A-Max II+, the setup involves pulling and replacing a chip—no easy matter. After several hours of tweaking and one reinstallation, I got the emulation running properly, with flawless multitasking. The Amiga side is only a hotkey click away, and many processes run faster than on an equivalent Mac.

Using System 7.0 and 7.1, I tested Mac productivity software, including QuarkXpress, PhotoShop 2.0 (2.5 didn't work), QuickTime, and about two dozen others, and they all ran without a hitch. Games and programs that flagrantly break Apple's programming rules may not work, though a surprising number of them did run with the aid of the optional video modes called Optimized and Paranoid.

Graphics also work well, with a stock non-AGA Amiga displaying the Mac emulation in 16 colors, an AGA Amiga in 256 colors, and a 24-bit graphics board in 256 to 16 million colors. Graphics emulation is noticeably slower than on a Mac, and you can set the display to monochrome. A 24-bit graphics board speeds up the graphics considerably, but the display is still slower than on a fast Mac.

Thanks to the wizards at ReadySoft, the 128K Mac ROMs think they are 256K ROMs, and can display colors beyond their wildest monochrome

W S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New Data Sets 3.9.15
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The World
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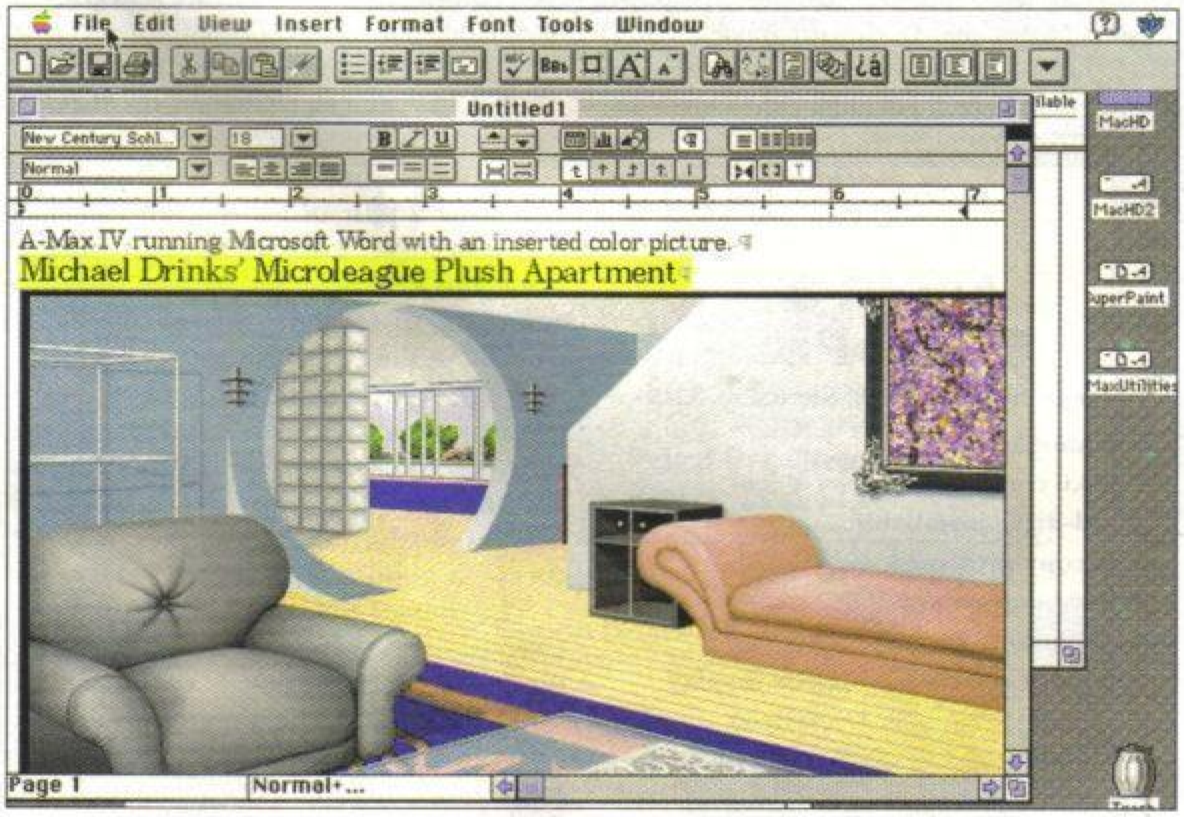
AppleTalk Remote Ac
QM Remote™ alias
Microphone Settings
Word 5.1a alias
IN CONTROL
IN CONTROL 2.0 alias
Apple File Exchange
File Transfer IV alias
CD Remote alias
MacHD
MacHD2
SuperPaint
A-MaxUtilities
Trash
Earth Explorer Encyclopedia


File Edit View Insert Format Font Tools Window
Untitled1
New Century Schl...
18
Normal
Page 1
Normal+...
MacHD
MacHD2
SuperPaint
MaxUtilities

A-Max IV running Microsoft Word with an inserted color picture.

Michael Drinks' Microleague Plush Apartment

A-Max IV literally opens windows of opportunity with System 7-compatible Mac software on your Amiga.

dreams. Since A-Max IV also supports the Mac's multiple monitor system, you can create an extended virtual desktop. Armed with a 24-bit Retina card (MacroSystemUS) and a second monitor, you can move the pointer or drag an object directly from a Mac program on the Amiga monitor to a Mac program on the Retina monitor.

DOUBLE-DENSITY DILEMMA

Despite its many advances, A-Max IV, unlike A-Max II+, cannot read the so-called low-density (double-sided, double-density) disks from an Amiga low-density floppy drive. Fortunately, it still accesses low-density Mac disks through an included program that reads low-density disks to a special hard-drive file that is normally accessed from the Mac desktop. While not as simple as just inserting a disk, it's easy to adjust, and far better than not being able to read the disks at all.

A-Max IV reads high-density Mac disks, and virtually all current Mac software ships on such disks. Amiga high-density drives are now widely available, and are standard equipment on A4000s. As long as you have CrossDOS mounted, the high-density drive determines the type of disk inserted.

A new feature allows transfers from the Amiga clipboard to the Mac clipboard. For disk transfers, a custom Mac program lets you select from file-translation options such as text, MacPaint, MacBinary, and PostScript, and then transfer the files back and forth between any devices available to the two platforms. Both Mac and Amiga sides can read PC disks, which can then serve as an intermediary disk format.

A-Max IV can also create bootable Mac hard-drive partitions on Amiga drives, and can read Mac-formatted partitions created by both A-Max II+ and Emplant (Utilities Unlimited). It can make Mac-formatted hard files within Amiga-formatted hard-drive partitions, but these are slow and useful only as backups. External Mac hard drives and other SCSI devices like CD-ROM drives, scanners and printers can be accessed directly through the Amiga's SCSI port. (A4000 owners will have to add a SCSI card.)

Digitized Mac sound works properly through speakers hooked to the Amiga, although some audio paused a few times, and the sound in some games that break Mac rules doesn't always behave properly. The Mac side reads the Amiga clock for time and date. Memory handling is excellent, freeing up as much memory as possible for the emulation.

For all this power, A-Max IV makes very modest demands on the Amiga. It has low system requirements, needing only a 68020 or faster CPU with at least 4MB of memory, a Zorro slot, a hard drive, and AmigaDos 2.1 or later. No FPU or MMU is necessary. On the Mac side, you'll need System 7.0 or higher and a pair of 128K Mac ROMs—the least expensive and most widely available form of Mac ROMs.

The manual is comprehensive and well written, but rather technical. More examples and a better index would help. ReadySoft's technical support seems to have good and bad weeks, with long de- ►

lays more common than the speedy responses they were once noted for. When they do answer, they are always knowledgeable and helpful.

ROOM FOR IMPROVEMENT

A-Max IV isn't flawless. It lacks a separate Amiga-side operation screen and therefore has no cut-off switch. While a hotkey combination shuts down emulation, those keys seldom work after a crash, so if the emulation freezes, you can't shut off the power and instead must reboot the properly behaved Amiga side to resurrect it. The product suffers from inexplicable crashes, most often during file saves in Microsoft Word 5.1a. Despite these crashes, I have yet to lose a file.

Overall, A-Max IV is a marvelous device that works well with the installed base of software. It should have a long and happy lifetime as a professional, highly competent product that seems almost more magical than mechanical.

—Daniel Greenberg

AMIVR & STEREOPRO

MegageM; AmiVR, $299; StereoPro, $219

All Amigas.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Installation: Easy.
Minimum system: **Composite display (Amiga monitor or television). AmiVR requires an Amiga with composite output or encoder/genlock.**
Recommended system: **2+MB.**

3-D liquid-crystal shutter glasses.

If the number of films, books and games with the word "virtual" in the title is any indication, virtual reality is here in a big way. The easiest way to get a piece of the VR action for yourself is to add a pair of 3-D glasses to your Amiga, and I don't mean the old red/blue glasses worn to view "3-D" movies in days of yore.

Instead, MegageM now offers you liquid-crystal shutter glasses that generate a realistic 3-D image when used to watch an Amiga interlaced display, having a left-eye view on odd lines and a right-eye view on even lines. The shutters toggle on and off 30 times per second, so that the left eye sees only the odd lines and the right eye sees only the even. The result is breathtaking. As my four-year-old son succinctly summarized, "It's coming at me!"

COMPOSITE OR RGB: TAKE YOUR PICK

MegageM currently markets two varieties of 3-D glasses: AmiVR and StereoPro. AmiVR is designed as a video-oriented system; it plugs directly into the composite output of your video source, be it an Amiga or VCR. The composite signal tells the glasses how to synchronize to the 3-D imagery. Though StereoPro uses the same glasses, it plugs directly into the Amiga's joystick port. Your choice depends on your needs. If you have an A3000 or A4000 (which lack composite video output), choose the StereoPro. On the other hand, if you plan to watch 3-D movies on your TV or dump Amiga 3-D images to videotape, then go with the more flexible AmiVR system.

3-D TV
AMI VR-1

Enter the world of virtual reality with Ami-VR and Stereo Pro.

AmiVR comes in a lunch-box sized case with a pair of glasses, an interface box, one disk, a single page of instructions,and a 3-D videotape. The interface supports up to eight sets of glasses, so this doesn't have to be a solo experience. The terse page of instructions tells you everything you need to know about configuring the system, with hints for optimum viewing. The disk contains a hodgepodge of utilities, games, and pictures—a good starter set of 3-D tools.

The glasses weigh but a few ounces—easy to wear without fatigue. Depending on the material viewed, the 3-D effect is quite good, and one's ability to experience the 3-D seems to improve over time. I recommend a dark viewing room for best effect.

MORE THAN JUST FUN?

I recently completed a project in which I had to render several hundred frames in VistaPro 3 and create a 3-D fly-through. The result was exhilarating. VistaPro, which can build separate eye views automatically, begs to be used in full 3-D. Both ADPro and Imagemaster R/t are capable of converting these left and right pictures into interleaved stereo images, making at least one of these image processors a necessity for serious work with AmiVR.

Included on the utility disk is SPX, a 3-D rendering language that provides rudimentary commands for moving wire-frame objects about a 3-D environment. While you can use SPX to visualize simple scenes in vibrant 3-D, it is strictly an ARexx scripting language; you'll find no graphic interface here. If ARexx doesn't intimidate you, you can cook up some impressive animations in SPX. If, on the other hand, you never mastered Basic, this tool won't do you much good.

AmiVR and its joystick-ported cousin, StereoPro, are good values if you are interested in experimenting with the virtual world of 3-D. Put on a pair and dive into the world of cybersight.

—Dave Johnson

STUDIO16 3.0

SunRize Industries, $249

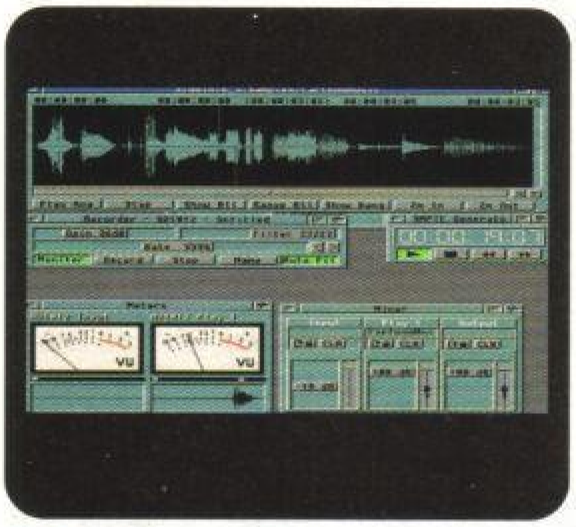
Any Zorro slot-equipped Amiga.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Minimum system: **SunRize AD1012 or AD516 sound card, 68030 or faster accelerator, hard drive.**
Recommended system: **Same as minimum.**

Upgraded software for the SunRize AD516 and AD1012 sound cards.

The Amiga audio market remains alive and relatively healthy, as demonstrated by SunRize's update of the Studio16 software for its popular sound and music samplers. Originally released for the 16-bit AD516 board, Studio16 in its latest version now also supports the AD1012, SunRize's 12-bit mono audio board.

SOUND INVESTMENTS

This Studio16 3.0 software upgrade may seem expensive, but the improvements are well worth the price. (For a full description of the Studio16 system, see "Reviews," Jan. '93, p. 18.) The most notable addition is a time-line-based Cue List Editor. This module, containing



Studio 16 lets you view your music.

transport controls for recording and playback, provides virtual tracks into which you can drop samples for editing and cued playback. This replaces both the Transport and CueList modules from previous versions.

Each track can contain samples or ARexx commands cued to a precise SMPTE (LTC) time-code location (both boards boast time-code input ports), allowing you to use Studio16 3.0 in a video post-production environment. You can move and place tracks and commands in time, using a drag-and-drop style that makes precise positioning easy. Fades and cross-fades (with full control over rate, level, and volume curve) of individual samples are easily adjustable with either the mouse or keyboard. Panning control is available for the stereo board, the AD516.

You can play back and rerecord (ping-pong) any or all of the individual tracks onto two new tracks: integral and non-destructive mixdown. The ARexx commands can operate on samples and—more importantly—control external programs, with the short list including such heavy hitters as the Video Toaster, Scala, Bars&Pipes Professional, T-Rexx Professional, and the Personal Animation Recorder. Studio16 can thus become the control center for an integrated multimedia extravaganza, as well as being able to respond to external control through its ARexx port. The CueList, useful in all sorts of applications, is quite easy to operate, having clear documentation and an excellent tutorial.

WORTHY IMPROVEMENTS

Other new features include external MIDI-controlled mixer support (JL Cooper FaderMaster or Peavey PC 1600, for example), automated Punch In and Out and mixing, and multiple-card support. Hardware requirements are stringent for best performance of the Studio16 system: It demands a minimum of a 68030 accelerator, as much system RAM as possible, and a large dedicated hard drive or partition. Each track minute of 16-bit audio at CD-quality rate (44.1KHz) requires 5MB. The faster the access time of the hard drive, the more tracks of simultaneous playback are possible.

To the end of optimizing hard-disk performance, SunRize has begun including the BigBlocks utility. This reformats each partition allocated for storing digital audio, increasing its logical block size and thereby reducing seek times. Studio16 is very hard-disk-intensive software; frequent backups and regular disk maintenance are necessary to ensure trouble-free use. Also included in the Studio16 software package are the latest versions of Commodore's HDToolbox (v40.4) and FastFileSystem (v40.1), which streamline and boost hard-disk performance. In case you have problems, phone tech support.

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dio16 3.0 has improved so that it is quicker on the screen redraw, more thoroughly integrated with other software, and generally easier to use. Even in a production environment, Studio16 passes with flying colors. The new CueList makes it possible to lay out all the sound effects for a video piece to precise time-code positions and cue them to video in one pass.

The new version also greatly simplifies and facilitates the task of using Studio16 as a digital multitrack recorder for professional applications. With the release of SunRize's Stereo Digital I/O board—the DD524—a totally digital-audio signal path is now possible on your desktop. Considering its refinement, the price of Studio16 3.0 seems quite reasonable.

—Michael Hanish

TRAPFAX

TrapDoor Development (distributed by Expert Services), **$129.95**

All Amigas.
2.0/3.0 compatible.
Hard drive required.
Not copy protected.
Accelerator compatible.
Minimum system: **1MB, hard drive, fax modem.**
Recommended system: **Same as minimum.**

Fax-modem software.

It's no surprise that your Amiga is capable of outperforming many dedicated fax machines. You can lay out a fax form in your favorite word-processing or page-layout software. You can schedule late-night faxing, when phone rates are cheaper. And you can view the faxes beforehand, saving paper costs by sending only those you select. These advantages and more are provided by TrapFax, a software program with which you can send and receive faxes using your Amiga and any compatible Class-2 fax modem.

FAXING VIA AMIGA

TrapFax uses a modular approach to creating, sending and receiving, managing, and printing your faxes. After you install the program, it must be configured, which consists of entering the phone number and name associated with your fax modem, as well as the directories for storing the incoming and outgoing faxes. With default options already in place, the setup takes little time.

You create faxes in the program of your choice. When you select (via an icon) the print option of the program, the document is sent to the TrapFax printer driver instead of your printer device. Once the fax is created, a requester appears asking for the recipient's name and phone number. You can send the fax immediately, or at a specified later time. If these fields are used, TrapFax attempts to send the fax each day at the selected time until it is successful.

THAT'S THE FAX, JACK

You can manually enter the fax-recipient data or select it from the phone book, which lists the names and phone numbers of people to whom you regularly send faxes. You can add or delete entries at any time. TrapFax also allows you to send a fax to multiple numbers, selected either from the phone book or by entering them manually in the To field. You can either delete your faxes after transmission or save them in the Sent drawer for later retrieval.

The program contains a module, the Fax Queue, that manages matters by displaying the faxes received, previously sent, and to be sent. The current status of any call is shown here, and you can add new faxes to the queue and edit the destinations.

A TFaxView option allows you to view faxes by zooming in and out and scrolling around the page. You can also view multiple-page faxes and convert faxes to IFF format for importing into paint programs. Moreover, you can direct a fax to your printer, using options that adjust the scaling, print density and aspect ratio, center the fax on the page, and tailor it to fit.

SEND AGAIN

TrapFax comes with a well-written manual explaining all the functions of the program and including a fair number of screenshots for reference. The manual further tells you how to use TrapFax with TrapDoor, a FidoNet mailer also from TrapDoor Development. In addition, you will find information on using the program with ARexx, as well as tips on creating good-looking faxes from a variety of Amiga software.

A few minor problems haunt the program. At first, accustomed as I was to other fax programs that use solitary interfaces, I found the modular approach a bit confusing. Also, some of the labels on the various parameters in the program seem somewhat obscure until you get used to them. Overall, however, TrapFax does a good job in letting your Amiga outperform a stand-alone fax machine.

—Dave Thomas

SWIPES!

Byrd's Eye Software, **$149**

A4000 only.
3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Minimum system: **Toaster 4000-equipped Amiga 4000.**
Recommended system: **Same as minimum.**

Digital-video effects package for the Toaster 4000.

TOASTERFX

Byrd's Eye Software, **$225**

A2000/3000/4000.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator compatible.
Minimum system: **ImageFX and Video Toaster-equipped Amiga. 2MB chip RAM needed for preview module.**
Recommended system: **Same as minimum.**

ImageFX compatibility package for use with the Video Toaster.

When the Video Toaster made its debut in 1990, NewTek heralded the software configurability of the system's DVEs (digital-video effects). Unlike most other effects units of the time, the DVEs were not ROM-based in the hardware, and NewTek promised software that would allow you to create custom DVEs.

That software never materialized, and the Toaster's canned effects became quite commonplace. Since then, each new release has brought new effects and more banks into which you can load them. When the wow factor wears off, however, you're saddled with a limited number of canned effects, most of which are of limited use to videographers.

Swipes!

Where there's a market, enterprising developers like Byrd's Eye Software jump in to fill the niche. Its latest offering, Swipes!, does not allow you to create your own effects, but instead adds to the arsenal of available DVE choices. Unlike most Toaster DVE expansion kits, Swipes! makes extensive use of both full-color animation and transparency in its DVEs. Doing so requires an Amiga 4000-

based Toaster setup, but serious users of the Toaster Switcher are already using A4000s anyway.

Swipes! arrives on five high-density disks with a custom installer program. Installation requires 20MB of free hard-disk space to accommodate the 64 effects. Once installed, loading project number 148 into the Switcher fills both banks A and B with the new effects. The majority are transitions of various kinds. Some examples include soft edge swirls, sweeping stone, metallic, and translucent colored bars. You'll also find a couple of blobby organic transitions and a wall of flames. Some effects even include cued audio effects. Although a few border on gimmickry, they match the quality of the DVEs supplied with the Toaster 4000.

Byrd's Eye has clearly taken advantage of LightWave and the Switcher's alpha support. However, one effect in which a passenger jet flies at and over the camera as the other channel is wiped in suffers from some aliasing on the wings, making it a bit less desirable to use. A particular favorite of mine is a 30-second countdown timer (displayed in the lower-right corner of the screen) that can adjust its start time by pulling on the T-bar.

While I'm still waiting for a full-featured DVE editor/creator for the Toaster Switcher, I'll settle for this large library of canned effects. Those provided in the Swipes! collection do a great job, and I'll be interested to see the next batch of DVEs from Byrd's Eye.

ToasterFX

Great Valley Products' ImageFX continues to be one of the most versatile and functional image-manipulation packages available for the Amiga. Its built-in support for other devices and image formats has been outstanding. But until recently, Toaster users have been somewhat neglected. While ImageFX could read and write Toaster Framestore-format files, with it you could not take advantage of the Toaster's framebuffers.

Enter ToasterFX. This software package allows ImageFX to use those framebuffers for both preview and render operations. For those not familiar with ImageFX, its interface to the artist is the preview screen where all dynamic operations take place. At any point after an operation is complete, you may render the contents of the preview to any supported image format or display device.

FX For Images

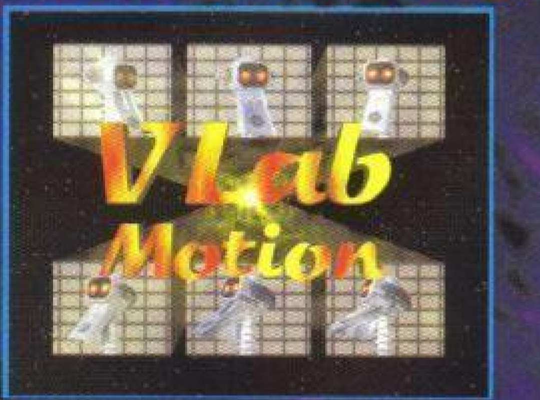
With ToasterFX, running ImageFX on a Toaster framebuffer is simply a matter of selecting VideoToaster from the preview prefs. Note that 2MB of chip RAM is required to use the Toaster preview, so A2000 owners will need a DKB MegaChip or similar product. All standard ImageFX operations are performed dynamically on that buffer (DV1). However, ImageFX performs its operations in a two-pass manner. For example, the program uses a rough representation of the brush while drawing, but updates the DV1 with the actual result only when the stroke is complete. This is not unique to the Toaster preview, and the updates are pretty quick and generally do not hinder the creative process, but I would not rely on it heavily as a full-color paintbox.

While using ToasterFX, the Switcher remains active and performs most normal transitions. But certain digital ef-

Continued on p. 48.

VLab Motion System

LET THE NONLINEAR REVOLUTION BEGIN!!



Let the revolution begin! Here's what you've been waiting for. Now you can bring the power and versatility of true on-line video and audio nonlinear recording, editing, and playback to your Amiga. The VLab Motion System is built around a Zorro II card that utilizes a compression/decompression JPEG chipset and other specialized chips to provide real time digital video capture and playback at YUV 4:2:2 square pixel quality, real-time effects like chroma keying, genlocking, picture-in-picture, and video scaling. The VLab Motion is also perfect for computer animation playback from any animation package. Complete ARexx support allows special effects and digital video effects to be applied to your video frames with third party image processors like ADPro™ and Image FX™. Included in the system is the Toccata 16 to bring simultaneous 16-bit audio into the production. Full compatibility with Retina Z2 and Z3 display enhancers allows users to add a high resolution, 24 bit interface to VLab Motion System's powerful MovieShop software. No time base corrector, time code, or dedicated hard drives are required. VLab Motion includes composite and Y/C input and output with an expansion socket for digital YUV or RGB component transcoders. The VLab Motion System also provides an additional adapter for direct interfacing with the Video Toaster™. Add the VLab Motion System to your video or graphics studio and you will fly above the rest. Call for complete brochure.

RETINA Z-III

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Graphics Display Enhancer

The Retina Z3 is a full Zorro III card providing enhanced graphic display with up to 4 megs of on board memory for your Amiga computer. Higher resolutions of up to 2400 x 1200 and 1152 x 862 in 24bit are now possible. The Retina Z3, as a pure Zorro III card, provides a data transfer rate 4-5 times higher than the Retina Z2. An embedded blitter increases the display speed up to 10x faster than the original A4000. The Z3 includes workbench emulation and retargettable graphics to allow OS compliant applications to run in the Z3 resolutions. The Retina Z3 card also includes an expansion socket for composite and Y/C output. The software features RACE, a 16/24bit animation creation and playback software, and a powerful paint program, XI Paint. Model, paint, publish, or program in resolutions far above even the AGA machines. The Retina Z2 is also available at special pricing, and current owners of the Z2 will recieve a special upgrade price for the Retina Z3.

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ZIII

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Digitize Video at 30fps with IFR

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* Supports YUV, IFF, IFF24, AGA IFF
* VLab Y/C also has 1 Y/C input
* Versatile windows based software
* Direct control from Retina's XI Paint
* Full Arexx support
* Special IFR (interleave frame recording) allows digitizing at 30fps
* No time base corrector required
* Preview monitor for video or still image
* Improved Interface with Retina ZII or ZIII
* OS2.0 and up compliant
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* Real time color control
* Directly support by ADPro™
* Compatible with Toaster and OpalVision

TOCCATA 16
16 bit/48Khz Audio Sampler

* Full 16 bit/48Khz audio digitizer
* Offers ADPCM data compression
* SMPTE timecode module available
* 64 times oversampling - 16 sampling rates
* 3 stereo in, 1 microphone in, 1 stereo out
* 95 dB signal to noise ratio
* Record and playback simultaneously
* OS2.0 and up compliant
* Non-linear software - Samplitude
* 16 and 8 bit IFF, AIFF 16bit
* Frequency range of 10Hz - 20Hz

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MULTIMEDIA:
STATE OF THE ART

Six Degrees OF PRESENTATION

Multimedia developers for the Amiga continue to define the state of the art in desktop presentation software. Learn what makes these programs cutting edge and compare features of six of the leading packages.

BY GEOFFREY WILLIAMS

As the pioneer platform for multimedia, the Amiga enabled developers of multimedia software to produce the best and most sophisticated programs in the field. While improvements to more recent PC and Mac systems have allowed developers on those platforms to play considerable catch-up, Amiga multimedia still maintains a leading position. (Even IBM itself has used the Amiga in recent major multimedia presentations.)

We'll take a look in this survey at the state-of-the-art features that make the Amiga so attractive for multimedia, and at the programs that make it all possible.

STATE-OF-THE-ART FEATURES

IN YOUR OWN search for the right multimedia package, there are a number of state-of-the-art features to keep an eye out for. I have broken them down by category for discussion. Because the various programs support different features, you'll want to check out the comparison chart (p. 18) to see which programs do what. The chart follows the same basic breakdown as the text.

CHARACTER GENERATION

While any program can load bitmapped fonts, most programs now support ColorFonts and scalable CG fonts. For both bitmapped and scalable fonts, you need the program to antialias the text as it is displayed. This makes the text look much smoother and eliminates jaggies. The more levels of antialiasing (the number of colors used between the font color and the background color), the smoother the text will appear.

There are several text attributes that determine how text will look. Besides bold, underline, and italics, some programs let you add such attributes as 3-D extrusion, outline, embossing, ghosting (transparent interior), or drop shadow. These can be adjustable, allowing you to set the shadow depth, the size of the outline, or even the angle of the italic. Some programs restrict you ►

PHOTO COURTESY OF THE IMAGE BANK, DISK PHOTOGRAPHED BY ED JUDICE

to changing the attributes of an entire line, while others offer character-by-character adjustment. Some even allow you to scroll text for titles or to crawl a line of text across the screen.

GRAPHICS IMPORT AND DRAWING

There are two basic types of graphics: bitmapped and object-oriented. Bitmaps are in the IFF format on the Amiga and in numerous formats on other platforms. Some programs let you load a variety of formats from other computers. Object-oriented graphics, on the other hand, are typically found in EPS (Encapsulated PostScript) format. You can scale such drawings without losing any resolution, as they are mathematical representations rather than made up of specific pixels. You can also create them from within a program.

A powerful feature of some programs is the ability to load bitmapped graphics, scale them to the size you want, and use a remapping and dithering algorithm to make that image match the current palette you are working in. This enables you to make very efficient use of even very limited palettes—which is very important

FEATURES OF SIX DESKTOP-PRESENTATION PROGRAMS

TEXT	CanDo 2.51	Helm 1.55	MediaPoint	Scala MM300	VideoStage	B&P Pro 2.0
ColorFont?	No	Yes	No	Yes	Yes	No
Antialiasing?	No	No	1 level	4 levels	4 levels	No
Font attribute	b, i ,u, o, s, e, g (C)	b, i, u, s, L (C)	b, I, U, S, J, K, L, (C)	B, I, U, O, S, (L), 3D	b, i, u, O, S, K, L (L)	
Scrolling?	No	Vertical	No	Horizontal	Vertical/Horizontal	No

b=bold, i=italic, u=underline, o=outline, s=shadow, e=embossing, g=ghosting, j=justification, k=kerning, l=line spacing, 3D=three dimensional. An uppercase letter means that the effect is adjustable. (L) indicates that the attributes apply to the line only; (C) means that attributes affect individual characters.

GRAPHICS	CanDo 2.51	Helm 1.55	MediaPoint	Scala MM300	VideoStage	B&P Pro 2.0
Formats	FAX	IFF	Uses 3.0 Datatypes	PCX, GIF (optional)	IFF	IFF
Scaling?	No	Yes	Yes	Yes	Yes	No
Remapping?	No	Yes	Yes	Yes	No	No
Dithering?	No	No	4 types	Yes	No	No
Color cycling?	No	DPaint III	DPaint III	DPaint III	No	No
Tiling brush?	No	No*	Yes	No	Yes	No
NTSC limit?	No	No	Yes	No	Yes	No
Paint program?	Yes	Yes	No	No	No	No
Draw program?	No	Yes	No	Yes	Yes	No

*Does have pattern editor

ANIMATION	CanDo 2.51	Helm 1.55	MediaPoint	Scala MM300	VideoStage	B&P Pro 2.0
Formats	ANIM-5	ANIM-5	ANIM-5, -7, -8 CDXL	ANIM-5, -8	ANIM-5, -3, -4	ANIM-5
Animbrush?	Path	Place	Place	No	No	No
From hard drive?	No	No	Yes	Yes	No	No

SOUND AND MUSIC	CanDo 2.51	Helm 1.55	MediaPoint	Scala MM300	VideoStage	B&P Pro 2.0
From hard drive?	No	No	Yes	Yes	No	No
MOD Formats	None	None	ST, NT, P, F, J, M, SM, T, D	ST, D	ST, NT, P	None

ST=SoundTracker, NT=NoiseTracker, P=ProTracker, F=FutureComposer, J=JamCracker, M=MarkII, SM=SoundMonitor, D=DSS

CONTROL	CanDo 2.51	Helm 1.55	MediaPoint	Scala MM300	VideoStage	B&P Pro 2.0
Brush/object button?	Yes	Yes	No	Yes	Yes	No
Free-form button?	Yes	Yes	No	No	No	No
Pointer-highlight button?	No	No	Yes	Yes	No	No
Absolute?	No	No	Yes	Yes	Yes	Yes
Schedule?	No	No	Yes	Yes	No	No
ARexx	i/o	i/o	i/o	i/o	out only	i/o
Recorded?	No	No	Yes	Yes	Yes	Yes
Time code?	No	No	SMPTE	MIDI time code, SMPTE (optional)	No	MIDI/SMPTE

I looked at prerelease versions of CanDo 2.51 and VideoStage Pro, so the release versions may have additional features not covered here.

because even on 256-color screens, some programs limit you to 126 colors for better transitions or special effects.

I find color cycling to be a powerful animation technique, requiring little effort and using almost no system resources. It is especially effective on still screens where you want to add a little movement or flash. There are two types of color cycling: DPaint III cycling, the most commonly supported, and DPaint IV cycling, a much more powerful type—with more cycling ranges that can overlap without having to be sequential. Few programs, however, support it.

Background creation is another factor to consider. A great way to make backgrounds is to use tiling brushes, as popularized by JEK Graphics' excellent ProFills. Basically, this involves taking a small, specially designed brush and stamping it down repeatedly to fill up the background. Thus, programs that can use tilable brushes make it possible to store entire backgrounds in only the amount of space required by a single brush.

Also, if you are creating a multimedia program for transfer to video, then you need to be able to eliminate colors that bleed or break up on video. Some programs have an NTSC color filter, which filters the colors on the screen so that they will still look good on video.

Some packages even have complete built-in paint programs, allowing you to create graphics from within the application. Some even include draw programs, which differ from paint programs in that they let you draw object-oriented graphics on the screen, scale them, and easily move them around. A draw program is very handy for creating everything from buttons to text bullets; also, they usually include a number of predrawn objects, such as stars and other simple shapes.

ANIMATION

With the Amiga's impressive reputation for animation, it's natural that Amiga multimedia programs would excel in this area. Although we lack a format like QuickTime that synchronizes animation and video to sound, most Amiga multimedia programs provide some way to achieve audio synchronization.

Most Amiga multimedia programs make full use of the computer's powerful coprocessor chips for moving screens around and doing transitions. They also, however, can take advantage of six basic animation formats that incorporate compression schemes and other space-saving routines to help with the process. ANIM-5, the original animation format, has been superseded by the speedy ANIM-8 format, designed to take advantage of the faster processors. While not an official standard, ANIM-7 can, in some cases, provide even faster animation. Completing the range of animation formats are CDXL, designed for CDTV; MPEG (Moving Pictures Experts' Group), a universal cross-platform format for video; and, finally (and of most significance to multimedia), the Amiga's own animbrush standard.

An animbrush can be displayed anywhere on the screen, and some programs can even move it along a path. Just like the ability to create tiled backgrounds, using animbrushes is also a tremendous space saver. The same little animated character can be saved as an animbrush and used over many different backgrounds. With the ability to move it along a path, you can even have the character walk around in different environments or move according to user input. Imagine how much space and memory you could save when you don't have to create a complete animation for each instance.

In addition, the ability of many Amiga programs to play an animation directly from hard disk makes it possible to display animations larger than memory. It also makes for easier synchronization of large animations because there is no load time.

SOUND AND MUSIC

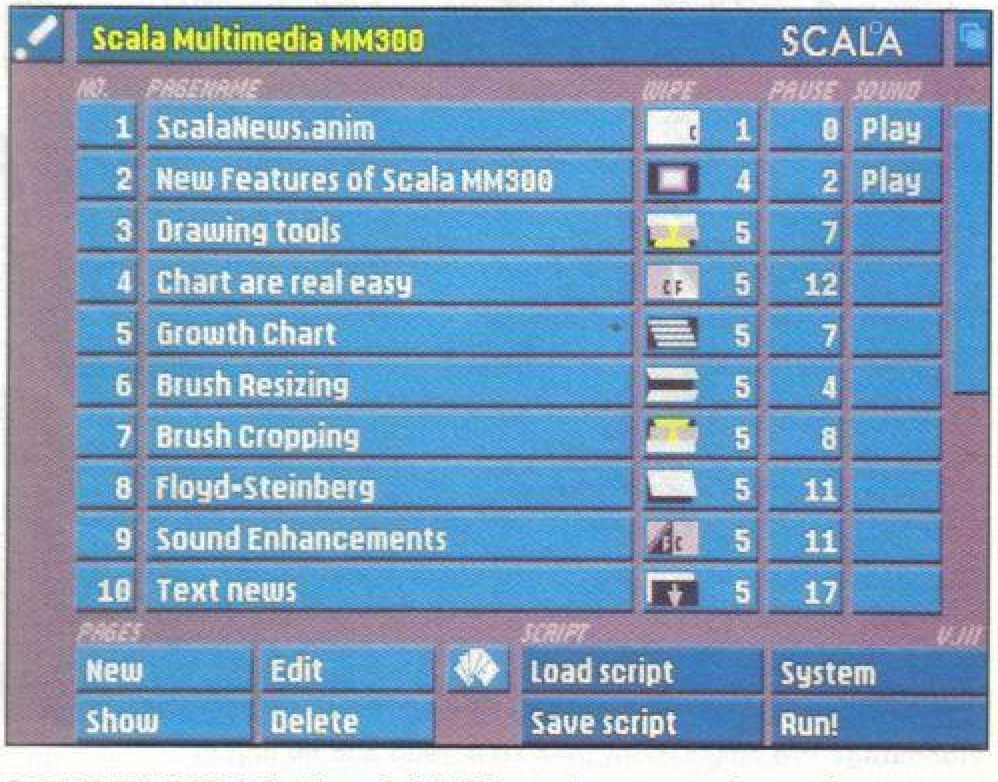
Any multimedia program can play sound samples, but one of the more powerful features of some programs is the ability to play digitized samples of any length directly from hard disk—again, as with animation, allowing you to play samples larger than memory. Similarly, when very large samples can be played instantly, it makes it easier to synchronize them with other events in the presentation—rather than having to wait for them to load or using up a lot of memory with a preload.

I doubt that anyone has been very satisfied with the quality of SMUS (Simple Music Score) format, although most multimedia programs support it. Much more popular are MOD (Music Module) files. These files use sampled instruments of fairly high quality, and they tend to sound much better than does SMUS music when it is not played through a MIDI instrument. Multimedia programs support a wide variety of these kinds of formats, including SoundTracker, DSS, FutureComposer, JamCracker, MarkII, NoiseTracker, ProTracker, and SoundMonitor.

BUTTONS

Programs that lack draw or paint tools usually have at least a special button creator to generate three-dimensional-looking square buttons. A few programs let you make anything (brush, line of text, and so forth) into a button, while the others restrict you to rectangular shapes. The latter is a significant limitation in cases where you want to make free-form buttons of any shape available in your presentation. (For example, you might want to create a representation of the parts of an engine and have each part function as a button.)

Also, it is not always clear in a presentation what objects or shapes are buttons, but some programs provide a very helpful feature to overcome this problem: ►



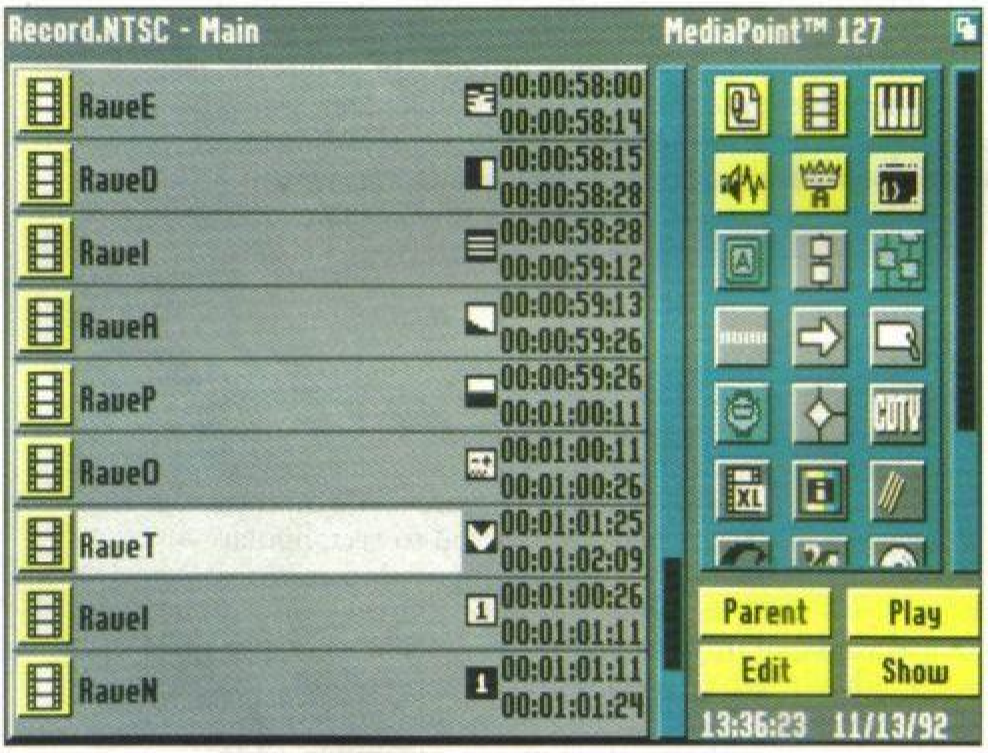
NO.	PAGENAME	WIPE	PAUSE	SOUND
1	ScalaNews.anim	1	0	Play
2	New Features of Scala MM300	4	2	Play
3	Drawing tools	5	7	
4	Chart are real easy	5	12	
5	Growth Chart	5	7	
6	Brush Resizing	5	4	
7	Brush Cropping	5	8	
8	Floyd-Steinberg	5	11	
9	Sound Enhancements	5	11	
10	Text news	5	17	

Scala's MM300's interface is intuitive and very easy to master.

pointer highlighting. A button can be highlighted simply by passing the pointer over it—allowing the user to know immediately that the object is an interactive button.

Sequence Control

In addition to using interactive buttons, you can also control presentations through absolute timing (each event happens at a specific time after the start of the presentation), or by scheduling events to happen at a certain date and time. ARexx capability is important as a means of providing such control, although some programs offer only ARexx-out, meaning that the multimedia program can control other applications but not be controlled by them. Another useful feature provided by some programs is recorded timing—the ability to trigger events manually and have that timing recorded for use in the actual presentation. For video, the ability to synchronize to SMPTE time code is also useful, as events on a video can trigger overlays and sound from the multimedia program.

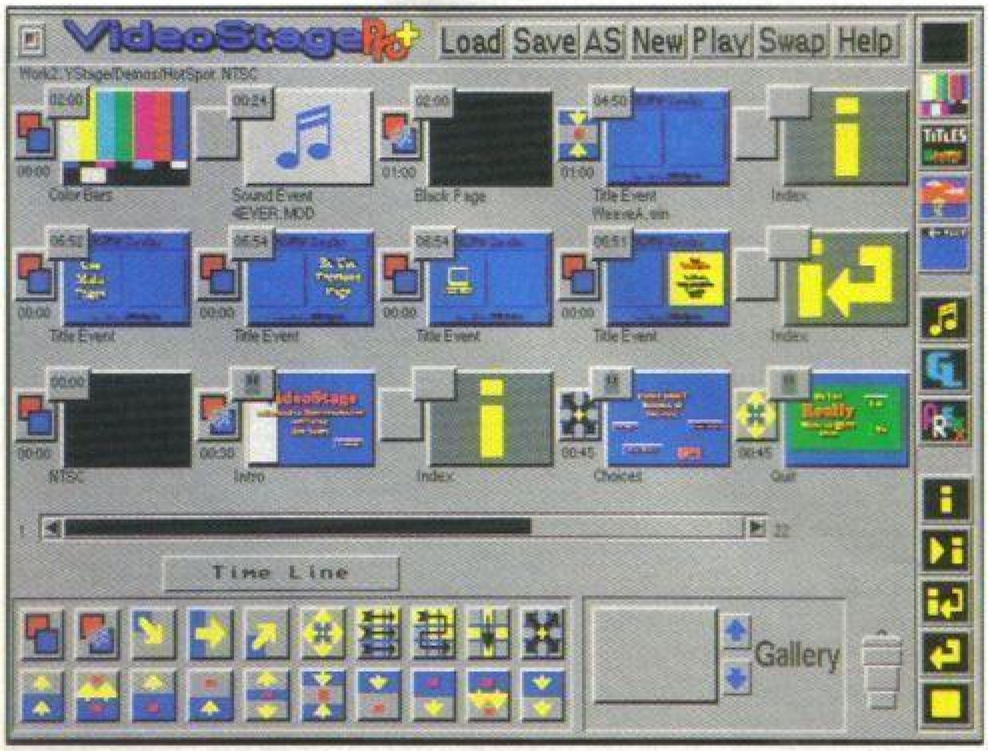


Record.NTSC - Main

RaveE	00:00:58:00 00:00:58:14
RaveD	00:00:58:15 00:00:58:28
RaveI	00:00:58:28 00:00:59:12
RaveA	00:00:59:13 00:00:59:26
RaveP	00:00:59:26 00:01:00:11
RaveO	00:01:00:11 00:01:00:26
RaveT	00:01:01:25 00:01:02:09
RaveI	00:01:00:26 00:01:01:11
RaveN	00:01:01:11 00:01:01:24

13:36:23 11/13/92

MediaPoint is chock-full of impressive features and effects.



VideoStage Pro offers more than 60 screen and 50 object transitions/effects.

THE PLAYERS

SIX AMIGA PROGRAMS possess many of the state-of-the-art multimedia features we have discussed. A seventh, Commodore's AmigaVision Professional, had a lot going for it, but began to fall behind in its display capabilities. Its current status is in doubt, though it can still create impressive presentations. We'll omit it here, however, and concentrate on the features of the other six.

Scala MM300

The leading Amiga display program is **Scala MM300** ($399, ***Scala Inc.***) (Scala also markets that program's more high-powered sibling, **InfoChannel,** priced at $2500 per master station and $800 per player station.) Its interface is very easy to master, allowing you to edit either a text-based event list or one with miniature images of the pictures in the show, and it has many impressive features. It comes with a simple, limited audio editor (basically just for trimming sounds) and an animation editor (AnimLab) that allows you to make, split, resize, add superimposed text to, and convert ANIM-5 to ANIM-8 animations. It will also convert animations to a format that plays back faster from hard disk.

MM300's 100-plus screen and object transitions are the best around. Using a process called color fading with two pictures that each use half the available colors, the palettes are split between the two for seamless transitions.

Scala uses an extensible format called EX (pronounced "ee-ex") to add external support. Included are EX modules for the Canon Xapshot, AVideo/Colormaster, Scala and GVP genlocks, GVP's IV-24, MIDI, CDTV, and the Sony and Pioneer laserdiscs. There are also many optional modules available for such things as format conversion and control of SunRize's Studio16.

The new InfoChannel 500 provides numerous additional features: almost twice as many wipes, invoicing capabilities for insert advertising, MPEG encoding and support for Scala's low-cost MPEG player, remote updating over a network or phone line, and support for many more external devices (including a range of video decks, switchers, and NewTek's Video Toaster). It also adds file support for GIF, TIFF, BMP, FLC, PCX, YUVN, PhotoCD, and Workbench 3.0 Datatypes.

MediaPoint

MediaPoint 127 ($299.95, ***MediaPoint International)***, MM300's leading competitor, sports impressive features of its own. It also comes with a freely distributable player, while MM300 does not. By connecting two Amigas with a null modem cable, you can achieve synchronized presentations or have one Amiga control the other. The picture-file requester displays thumbnails of all the images in a drawer. MediaPoint's 41 screen and object transitions include some unique swooping effects along curved paths.

MediaPoint offers extensible support for MIDI, CDTV, Canon's Xapshot, SunRize's AD516, NoahJi's Toccata, GVP's IV-24, NEC's PC-VCR, and the Sony, Pioneer, and Philips laserdiscs.

VideoStage Pro

VideoStage Pro ($179, ***Oxxi***) is the latest entry into the multimedia arena. Billed as a titling program, it is

quite a powerful multimedia program, as well, with many features adapted from the same developer's Presentation Master. It can generate algorithmic gradations for backgrounds and text fills. Among its more than 60 screen and 50 object transitions are effects that allow you to cross-fade between two 16-color images on AGA machines, and to perform fly-ins of the individual letters in a word. Many of the fly-ins of objects are also quite impressive, with control provided over multiple objects. The transition requester also gives you a visual animation icon that shows what each transition type looks like. It offers external support for Digital Creations' SuperGen and GVP's G-Lock genlocks, and for AudioMaster (Oxxi) sound sequences.

VideoStage Pro Plus ($499) provides the same features, but also includes remote updating of presentations via modem, event logging, and text conversion to Bezier objects for warping and 3-D effects. And, it is the only program here with the important EPS file-import feature.

CANDO

CanDo 2.51 ($199.95, ***INOVAtronics***) takes a very different approach to multimedia presentations. It allows you to create complete programs that use all of the Intuition features. Earlier versions were somewhat lacking in multimedia capability, but the current one greatly improves your ability to move between images. (An animated transition requester similar to VideoStage Pro's is included.) There are several unique transitions, many that use palette manipulation. CanDo has the most powerful math and variable features by far, along with improved animation support.

CanDo is more reliant on an understanding of scripting than the other programs (although a front-end actually generates the script), but it also provides far more flexibility and power. There used to be a liberal distribution policy regarding CanDo presentations, but now only noncommercial presentations are freely distributable. Commercial developers must pay a licensing fee of between $50 and $200 per year, which is quite cheap compared to such fees in the PC world.

HELM

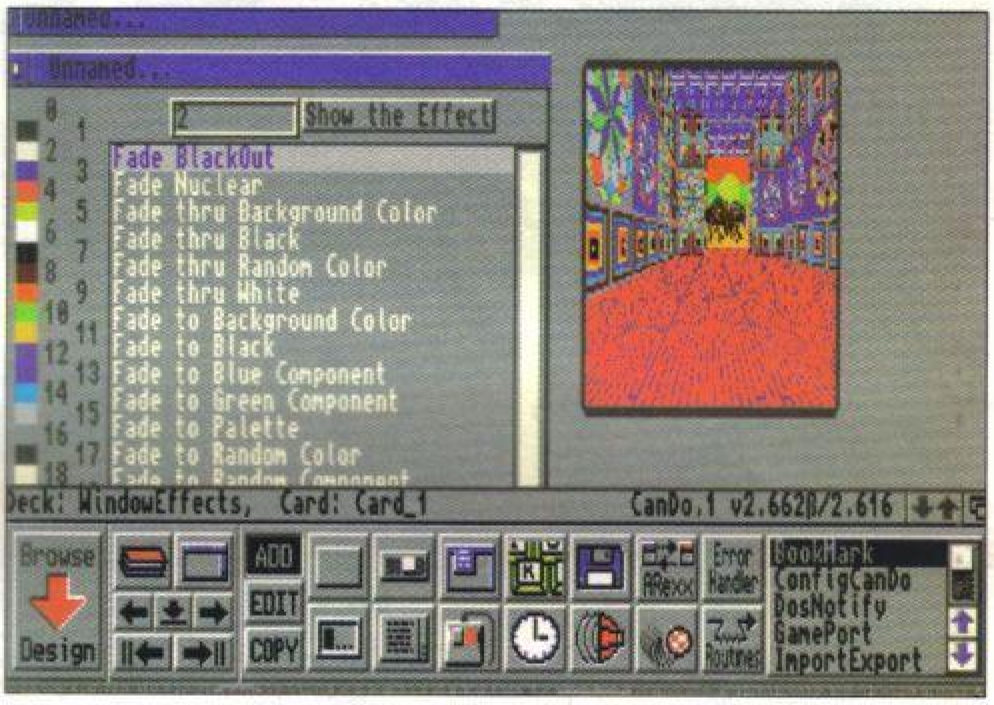
Helm 1.55 ($129, ***Eagle Tree Software***) is the low-cost alternative in the multimedia field. While not as powerful as the other programs, it still provides enough features to create impressive presentations; you might consider it a cross between CanDo's programming power and a full-blown multimedia application. It generates charts, sports several image-processing functions, provides strong math and variable handling, and allows you to generate many Intuition-like control panels with a great deal of flexibility. It offers 15 basic transitions, each with multiple directions, but they all tend to be more of the traditional variety. Helm comes with a freely distributable player.

BARS&PIPES PROFESSIONAL 2.5

While **Bars&Pipes Professional 2.0** ($429, ***The Blue Ribbon SoundWorks***) is the leading MIDI sequencer in the Amiga market, it also includes a number of multimedia capabilities (this is especially true with the latest version—2.5—which also retails for $429 and is available to registered 2.0 users for $69.95). While not designed with interactive features such as buttons and variables, it triggers multimedia events at specific points in the music, making for very accurate synchronization. It allows control over GVP's G-Lock and IV-24 (controls FreezeFrame in PIP), Interactive MicroSystem's MediaPhile video-editing system, Panasonic laserdisc players, SunRize's Studio16, Digital Creations' SuperGen, and NewTek's Video Toaster. It can even control a Scala presentation. Bars&Pipes Pro includes a freely distributable player.

All six programs offer you an impressive suite of useful features for creating multimedia presentations. The table on p. 18 can help you determine which one has the specifics that best meet your needs. ■

*Geoffrey Williams, director of Creative Business Presentations, is a frequent contributor to computer-video publications. Write to him c/o **AmigaWorld**, Editorial Dept., 80 Elm St., PO Box 802, Peterborough, NH 03458.*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2
Show the Effect
Fade BlackOut
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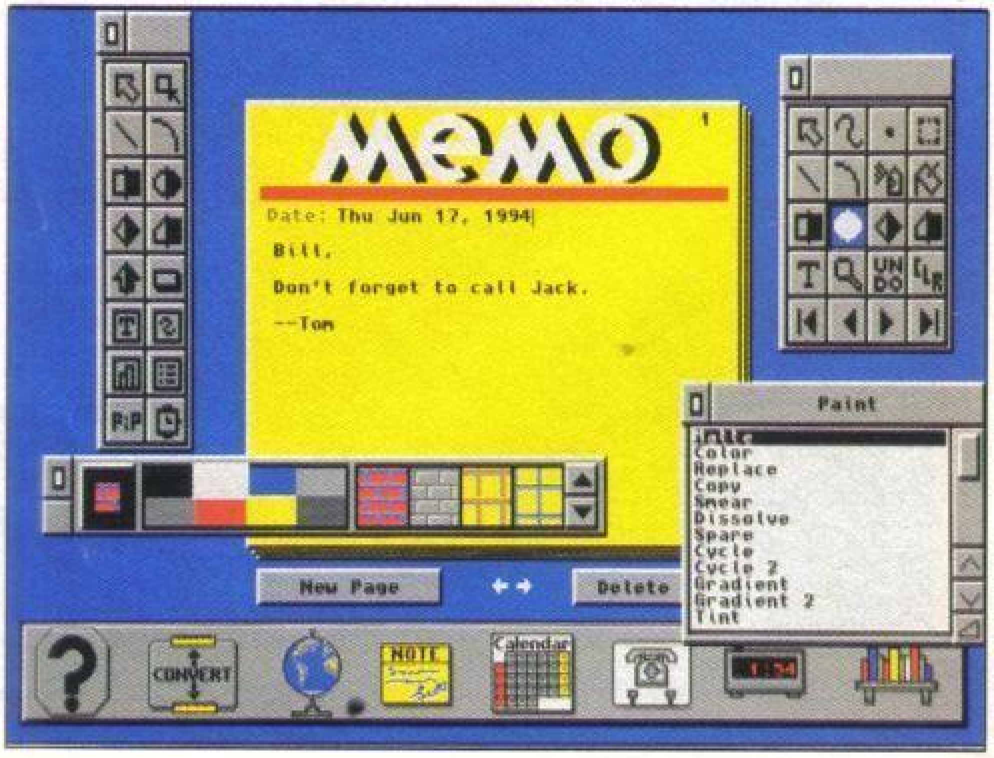
Fade thru Black
Fade thru Random Color
Fade thru White
Fade to Background Color
Fade to Black
Fade to Blue Component
Fade to Green Component
Fade to Palette
Fade to Random Color
Fade to Random Component
Browse
Design
ADD
EDIT
COPY
ARexx
Error Handler
Routines
BookMark
ConfigCanDo
DosNotify
GamePort
ImportExport

Deck: WindowEffects, Card: Card_1

CanDo.1 v2.662β/2.616

CanDo, a more script-oriented program, takes a different approach to creating presentations.


MEMO
New Page
Delete
Paint
Cycle
Color
Replace
Copy
Smear
Dissolve
Spare
Cycle
Cycle 2
Gradient
Gradient 2
Tint
CONVERT
NOTE
Calendar

Date: Thu Jun 17, 1994

Bill,

Don't forget to call Jack.

--Tom

Helm allows you to generate Intuition-like control panels that make your presentation easy to navigate.

Emplant
A-Max
AMIGA
AFE
CrossDos

CROSS-PLATFORM COMPUTING — PART 2: MACINTOSH

The Amiga User's Mac SURVIVAL KIT

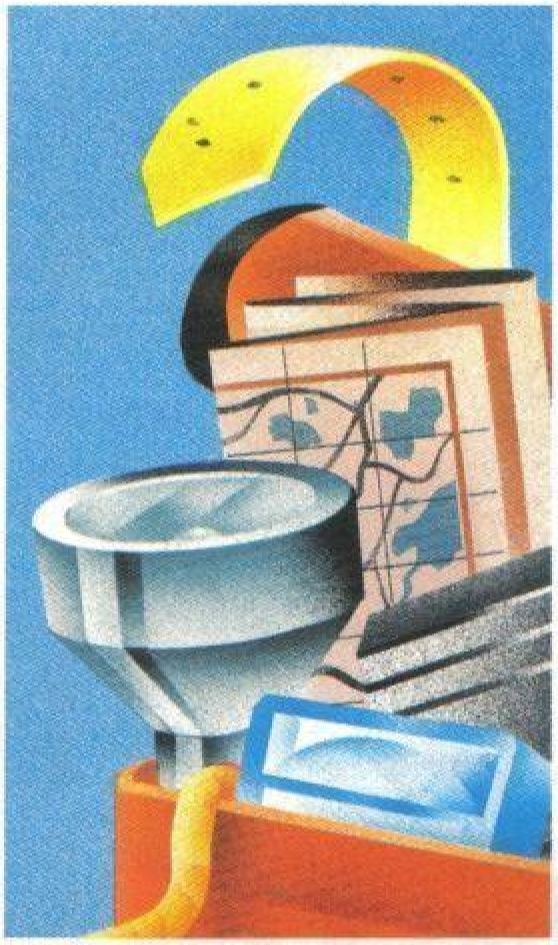
*This month **AW** wraps up its two-part feature on cross-platform computing issues by taking a look at how to make the Amiga and the Macintosh work together.*

In many ways, the Amiga and Macintosh are spiritual cousins. Both are based on Motorola microprocessors; both rely primarily on a mouse-based, graphical operating system; and both excel at graphics-oriented applications. But there are many differences as well: The Mac's multitasking makes the much-maligned multitasking in Windows seem smooth; the Mac has no built-in command-line interface like the Amiga; and the Mac is a fairly isolationist machine that works best with peripherals designed specifically for it, whereas the Amiga can easily share printers, modems, and even monitors with most PCs.

WHO NEEDS A MAC?

Although the PC has entrenched itself as the "industry-standard" generic computer and the first choice of most businesses, the Mac has grabbed a firm hold on the graphic arts and publishing segments of the market. Telling the average art director that she will have to trade the Mac on her desk for a PC would be like telling a NewTek ►

BY DENNY ATKIN



Video Toaster user that he's going to have to go back to an old-fashioned character generator—it's likely to elicit a very emotional reaction. Because of this, you'll find that most printing-service bureaus concentrate on Mac equipment. If you want to get high-quality printouts of your Amiga graphics or desktop-publishing documents, your life will be a lot easier if you and your Amiga can talk to Macs.

Another reason to be interested in the Mac is that the Amiga can emulate it very easily. Because all pre-PowerMac machines use the same 680x0 microprocessors as the Amiga, all that is required to let the Amiga run Mac programs are a few translations that let the Mac operating system talk to the Amiga's screen, sound chips, disk drives, and other peripherals. Because the microprocessor is the same, the emulation cards are much less expensive than PC emulators that must contain most of the guts of a PC on the card, and much faster than the cheaper, software-based PC emulators, which must translate every Intel 80x86 instruction into Motorola 680x0 code. Having a Mac built into your Amiga gives you access to programs that can fill in the few gaps in the Amiga's software library, such as the home-finance organizer Quicken, or top-notch word processors such as Microsoft Word or WordPerfect 3.0.

Finally, you may need a portable computing solution to complement your Amiga. Many Amiga owners prefer the Macintosh PowerBook to MS-DOS laptops, as it works much more like the Amigas they are accustomed to.

SOFTWARE SOLUTIONS

Some of us don't really need to run Mac software, but we do need to exchange documents and pictures with Macintoshes at work or at service bureaus. With the right tools, you can easily exchange data with a Mac using either floppy disks or serial communications.

Like the Amiga, Macintosh computers use a custom disk format that's not compatible with formats used by other computers. There are no Amiga programs available that will read and write directly to Mac disks—you'll need additional hardware, such as the **A-Max II** ($249.95), **A-Max IV** ($495.95, ***ReadySoft***), or **Emplant** ($279.95 and up, ***Utilities Unlimited***) emulators, or the now-discontinued **Mac-2-DOS** conversion software plus Mac drive if you need to access Mac disks directly. However, there's an easier solution: All Macintoshes that use the 1.44MB SuperDrive support a utility called Apple File Exchange (AFE), which lets them transfer files to and from 720K and 1.44MB MS-DOS-format disks. The Amiga has a similar utility, **CrossDOS**, included with AmigaDOS 2.1 and 3.0 or available separately from ***Consultron*** (as CrossDOS 5.0 Plus, $59.95). With CrossDOS and AFE, you can use MS-DOS floppies as an intermediate format for exchanging data. The only problem with this method is that you're limited to the MS-DOS filename style of a maximum of eight characters plus a three-character extension; you can work around this by using Insignia Solutions' AccessPC package on the Mac, which stores the full filenames on the disk, and Rainer Koppler's freeware APCNames utility to read and write the files from the Amiga.

You may find that an even better solution is **MacDOS** ($124.95, ***Media4 Productions***), a newly released software-only system that gives Amiga users easy and transparent access to Mac-formatted hard drives and high-density floppies. A marked advantage of this product is that it eliminates the necessity of using MS-DOS floppies as an intermediate format.

Another solution is to use a serial connection with a stand-alone Macintosh (such as a PowerBook), either direct or by modem. You can simply use terminal programs to exchange the data. There is one problem, though: Files created on the Mac contain Resource and Data Forks. The Resource Fork contains the icon, creator data, and other information needed by the Mac operating system. Mac terminal programs support MacBinary, a format that attaches the Resource Fork to the file so that it can be rebuilt when the file is downloaded on another Mac. But when this MacBinary data is added in front of a file such as a GIF or JPEG graphic, it confuses the Amiga applications trying to read it. An easy solution is simply to strip this data using a utility such as Steve Plegge's freeware DEMAC. Most Mac applications are intelligent enough to recognize file formats despite the missing Resource Fork, so you don't have to concern yourself with this when transferring most data files back to the Mac.

For very large files, you'll want to use a Bernoulli or SyQuest removable hard disk to do the transfer; more on this later.

ENHANCING EMULATORS

If you're doing a lot of Mac work, you'll want to pick up one of the excellent Mac emulators available for the Amiga. If your Amiga has Zorro slots, you have the choice of A-Max IV or Emplant, both of which emulate color Macintoshes at full speed. If you have an A500, A600, A1000, or A1200, A-Max II lets you emulate a black-and-white Mac. Your best bet is one of the Zorro cards, as they allow you to add accessories that enhance the performance of your emulated Mac. (Watch for a comparison of the Emplant and A-Max IV Mac emulators in October in "Head2Head.")

When you want to improve the graphics of a PC emulator, you must buy a video card that helps only the PC side of your Amiga. Because the Mac emulators use the same microprocessor—and thus the same bus —as the Amiga, you can enhance them by adding a card to the Amiga side of the machine, improving the computer's capabilities no matter which side of the machine you're using. Although it's not essential, a graphics card will help even AGA Amigas by speeding performance in 256 colors, as well as adding support for 24-bit displays and higher resolutions. On an ECS Amiga such as the A2000 or A3000, however, a graphics card should be your first purchase; otherwise, you'll be limited to using a slow 16-color display when ►

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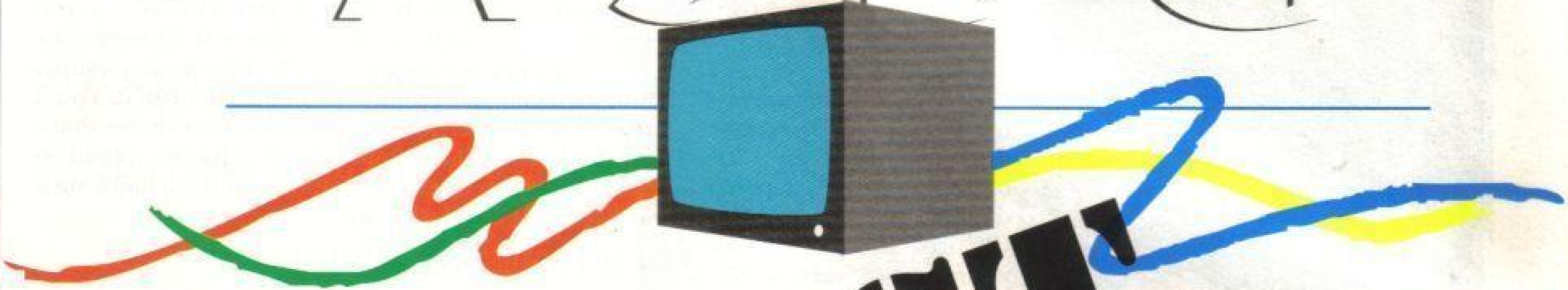

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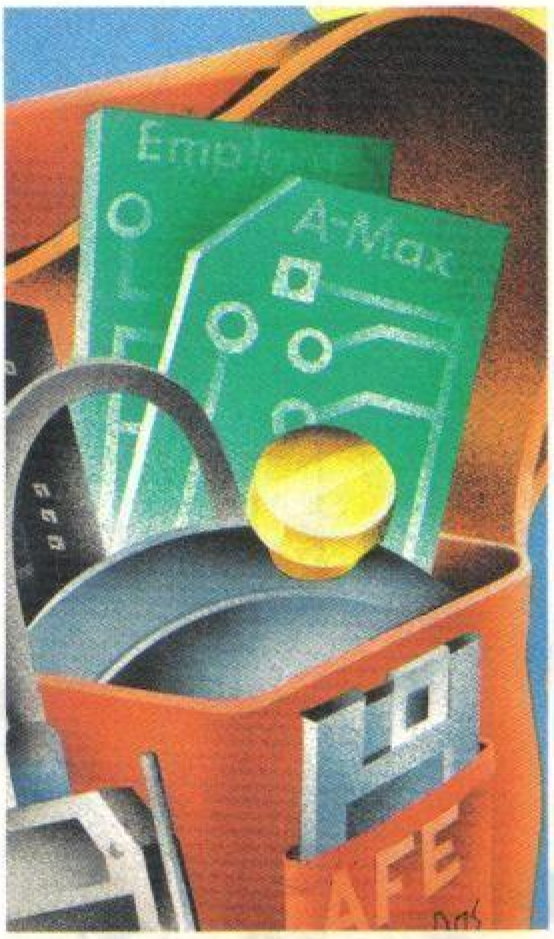


you're running Mac software. Which card offers the best performance depends on which emulator you choose. I'm fond of the **Picasso II** ($549 and up, ***Expert Services***); although it's not the fastest card out there, it works very transparently in both Mac and Amiga modes.

You have a number of options for data storage. You can dedicate a partition on one of your Amiga hard disks to storing Mac data. Chances are, however, that your Amiga hard drive is already nearly full, so you might consider adding a dedicated drive for Mac data. An additional internal hard drive is one solution, but a better option is to attach an external SCSI drive. If you need to move large files from your emulated Macintosh to a real Mac, you can simply unplug the drive from the back of your Amiga and attach it to the SCSI port on the Mac. If you'd rather not haul your hard disk across town, though, you might consider a Bernoulli or SyQuest removable disk drive. This gives you a portable Mac disk that can be carried or even mailed to service bureaus equipped with similar drives. And when you're not running the Mac emulation, you can replace the Mac cartridge with one formatted for AmigaDOS, thus increasing your Amiga-side storage.

Whatever Mac storage solution you choose, you should purchase a copy of Symantec's SuperDoubler, a Mac utility that can nearly double your available storage by compressing your files in the background.

If your emulator-equipped Amiga is near a group of networked Macintoshes, you can increase your storage by plugging into the net. A-Max IV and Emplant are both equipped with AppleTalk-compatible serial ports, and both support some Zorro II Ethernet cards as well.

PRINTING PANACEAS

If you're adding an emulator or a PowerBook to your existing Amiga setup, you're likely to run into trouble when it comes time to print. Most Mac owners use either Apple printers or one of a few printer models designed specifically for their machines, such as the HP DeskWriter. Apple's System 7 operating system doesn't include support for the third-party printer you probably have attached to your Amiga. You can peruse online services for PD or shareware printer drivers—a few are available for printers such as the DeskJet—but they're generally not very reliable in the 32-bit operating mode used by the Amiga emulators, and they usually don't support color.

GDT Softworks offers an excellent solution with its PowerPrint package. The latest version supports 32-bit color output on printers such as the HP DeskJet, and it includes a serial-to-parallel converter to speed output from Mac serial ports. Most public-domain printer drivers do not support advanced Mac printing features such as page flipping, precision bitmap alignment, and inversion, but PowerPrint does. With support for literally hundreds of printers from manufacturers such as Citizen, Epson, HP, Panasonic, and Toshiba, this is the cure-all solution for your Mac printing woes. Color output from Adobe PhotoShop to my HP DeskJet 500C was superb.

Another solution available if you have access to a PostScript printer or service bureau is to capture your PostScript printer output to a file, save it on a floppy, and then take it to another computer to print it. You'll need a special version of the LaserWriter driver that's patched so as not to require AppleTalk; you should be able to find this on online networks under a name such as LWNOAPPLETALK.sea.

A MULTIMEDIA MAC

Although most Macs don't have the animation horsepower to rival an Amiga, the machine has nevertheless been the development platform of choice for many multimedia programmers (largely due to the availability of Director, one of the better multimedia development packages on the Mac market). If you want to use your Amiga and emulator to access the abundance of Mac CD-ROM software out there, you'll need some high-performance peripherals. First of all, your Amiga should have at least a 25-MHz, 68030 microprocessor; most Mac multimedia titles work best on a 68040 system. Second, an add-on video card such as ***GVP***'s **EGS Spectrum** ($499 and up) or the Picasso II is practically a must, as video emulations that use the Amiga's graphics hardware can't keep up with the 15-frames-per-second screen-update rates required by some multimedia titles. Finally, you'll need a SCSI CD-ROM drive (and a SCSI port if your system doesn't already have one). Make sure you get a double-speed drive with 300K/second transfer capability. Apple's CD-300 drive is a good choice. It's fast and reasonably priced, and you can also use it with packages such as Asimware's AsimCDFS file software to access CD-ROMs on the Amiga side.

APPLE ANSWERS

For more suggestions on smooth emulation, you should look to resources such as local users' groups or the *Amiga Crossings* newsletter mentioned last month. The fastest support, though, comes from online services. Utilities Unlimited provides support on all the major Amiga networks, as well as on the Internet. Although ReadySoft is not online, you can find many A-Max owners who are always happy to share their experiences with you.

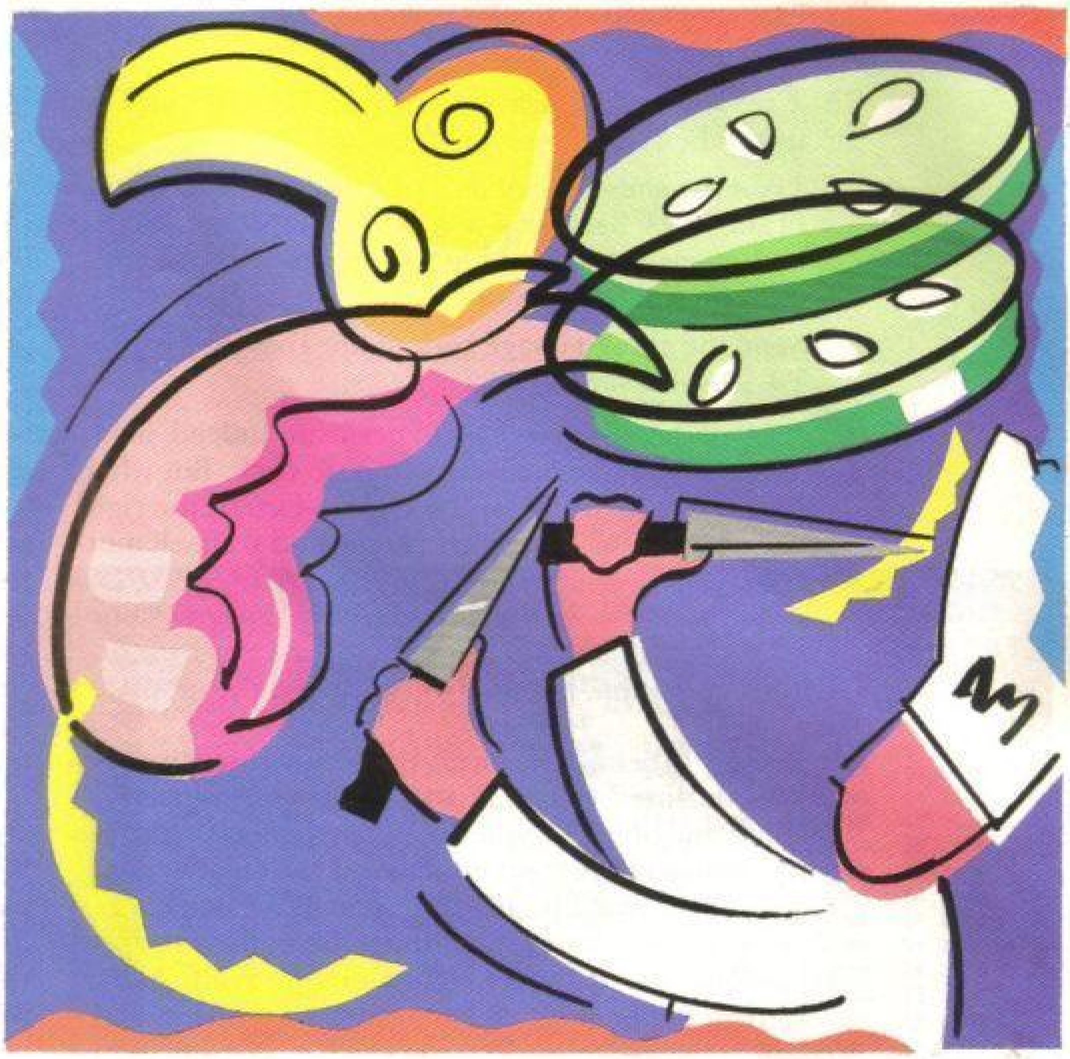
If you're traveling the information superhighway, you can subscribe to the Emplant mailing list for emulation hints and tips. Just send a letter to subscribe@xamiga.linet.org containing the line "#emplant yourname@yourdomain." Even better, check out the newsgroup comp.sys.amiga.emulations, which daily posts dozens of new messages covering emulations of computers ranging from the Apple Mac to the VIC-20. ■

Denny Atkin is an associate editor for ***OMNI Magazine*** *and author of the book* ***Denny Atkin's Best Amiga Tips and Secrets****. Contact him via e-mail at Denny.Amiga@aol.com, or write to him c/o* ***AmigaWorld*** *Editorial, 80 Elm St., PO Box 802, Peterborough, NH 03458.*

AREXX: ELECTRONIC GINSU

Part Two

It slices. It dices. The amazing ARexx does it all. Our two-part series demonstrates, through descriptions and examples, that this versatile language can deliver a million-and-one customized cuts.



"HAS FULL AREXX support!" "Offers more than 275 ARexx commands!" "Provides an ARexx port!"* Advertisements for Amiga software often make such claims, and advertisers obviously believe that they increase their products' value. Consumers, however, may be more puzzled than tempted by them. You may not be sure what these claims mean. How could a programming language possibly make your other programs more powerful or easier to use? What's more, your main concern is probably what ARexx can do for you—and how much effort it will cost.

As we saw in the previous installment, ARexx is no ordinary programming language. What makes it so different is its ability to expand its range of functions by incorporating commands from other programs. An ARexx program can execute ARexx commands, AmigaDOS commands, commands from special ARexx function libraries, and commands from any program that supports ARexx. This last feature, the ability to command applications, deserves a closer look.

EASIER BY THE DOZEN

Every application, whether it is a word processing program, a spreadsheet, or a paint program, performs certain functions in response to the user's actions. If you enter text, the word processing program adds that text to the current document. If you select the Save item from the Project menu, the paint program saves a picture file. An application that supports ARexx simply provides another way to select these same functions. Sending the message "SAVE myfile" from an ARexx program does exactly the same thing as selecting the Save menu item and typing "myfile" in the requester.

At first glance, this may seem like a giant leap backwards. It is generally considered easier to use the mouse and menus than to type commands. Easier, that is, until you have to perform the same series of a dozen steps 50 or 100 times. Then, you will find it much more convenient to write an ARexx script once, and have it save you several minutes each time you need to perform the same series of commands.

Let's take a real-world example. Say you are a ***NewTek* Video Toaster** owner who produces a weekly real-estate show on cable television. Each show requires a number of slides in which a picture of a house or broker is reduced to a small rectangle and superimposed over another picture. You use **Art Department Professional** (***Elastic Reality***, formerly ASDG) for the image processing, and perform seven operations on each still frame:

1. You load the framestore directly from the Toaster using the _VT_Grab loader.
2. Shrink the picture to 30% of its original size, using the Scale operator.
3. Make the picture more suitable for keying using the Dynamic_Range operator to raise the black level.
4. Put the image in the Temp buffer with the Temp saver. ►

---

* ARexx compatibility runs the gamut from limited to extensive. AmigaVision, for instance, has an ARexx port, but the program allows ARexx to control it in only a couple of ways. By contrast, ADPro allows ARexx to control its full spectrum of features ("full support") and ARexx commands can even add functionality to the program. Incidentally, 275 ARexx commands would probably be at the higher end of the scale.

BY SHELDON LEEMON

http://www.oldgamesitalia.net/ http://www.oldgamesitalia.net/

5. Create a solid black background 752x480 in size, using the Backdrop loader.
6. Load the small image from the Temp buffer on top of the black backdrop at a horizontal offset of 450, and a vertical offset of 40, using the Temp loader and the Compose option.
7. Send the altered image back to the Toaster using the VT_Display saver.

Each of these steps is easy to perform. Indeed, many of them require only a single mouse click. But when you have to perform all seven steps in exactly the right order on 20 or 30 pictures, you may find yourself muttering at the monitor after a while. Fortunately, ADPro allows you to use ARexx as a macro language. A one-line command in an ARexx script can perform any ADPro operation, just as if you had used the mouse or keyboard.

Listing 1 (below) performs the series of seven operations outlined. I created this ARexx program by loading one of the sample ARexx programs that come with ADPro into my text editor, and used it as a model (a procedure that I highly recommend for beginners). One of the most interesting things about this program is that only the first three commands are really ARexx commands. The Address line is used to send any non-ARexx commands to ADPro's ARexx port, which is called "ADPro" (watch out, these names are case-sensitive). The Remlib line is required because of an obscure idiosyncrasy of the Toaster's ARexx port that intercepts Call commands and returns an error. Finally, Call is necessary because _VT_Grab isn't really a loader, but another ARexx script.

Listing 1

```
/*
** F5.adpro
**
** $VER: F5.adpro 1.0.0 (05.07.94)
**
** This ARexx program grabs a picture from the Toaster,
** shrinks it to 30% of its original size, composites it
** on a black background, and sends it back to the Toaster.
** This script can be launched FROM ADPRO using the F5 key.
**
** This script requires ADPro 2.3.0 (or higher).
**/

ADDRESS “ADPro”                          /* Make ADPro listen for command */

REMLIB(“ToasterARexx.port”)               /* Make Toaster ignore the CALL */
CALL “adpro:loaders2/_VT_Grab”
                     /* Run the ADPro pseudo-loader that grabs the image */

PCT_SCALE 30 30             /* Reduce the grabbed image to 30% of its size */

OPERATOR “DYNAMIC_RANGE” 17       /* Raise the lowest black level to 17 */

SAVER “TEMP” “XXX” “RAW”                   /* Save the image temporarily */

LOADER “BACKDROP” “XXX” WIDTH 752 HEIGHT 480 COLOR FILL 0 0 0
                          /* Create a black backdrop whose size is 752x480 */

LOADER “TEMP” “XXX” COMPOFFSET 475 40
                /* Composite the small image on top of the black background */

SAVER “VT_BUFFER” “XXX” BUFFER 2
                          /* Save the resulting image to Toaster buffer DV2 */
```

All of the other commands in this program, from Pct_Scale to Saver, are ADPro commands. These commands are well documented in the reference section of the ADPro manual. If you look closely, you can see that they clearly correspond to the operations you perform manually with ADPro. So, you really don't have to be an ARexx expert to write one of these macros. A working knowledge of ADPro and a few minutes of experimentation are all it takes.

One way to execute your script from ADPro is to select the Execute ARexx Script item from the User menu. A far easier way, however, is to assign the script to a hotkey. If you save this script in the REXX: directory with the name "F5.adpro," for example, ADPro will run the script whenever you press the F5 function key. You'll really appreciate the convenience of this feature if you have many pictures to process in a row.

A LITTLE DAB'LL DO YA

While it is technically possible to write a macro file without knowing anything about the ARexx language, a little programming knowledge can really enhance the power of your scripts. A recent experience I had illustrates this fact. As manager of the Amiga forum on National Videotex Network, it is my job to activate files that are uploaded to the data libraries. This task isn't very hard, but it does require a few steps for each file. After logging on and entering the file preview area, I enter the number of the file to activate, type an "a" to activate the file, enter a "y" to confirm activation, and then go back to the menu for the next file. A few weeks ago, I asked the staff to upload several hundred files to the forum from a CD-ROM. This left me with the problem of activating all of them. I really couldn't see sitting there and typing the same series of keystrokes, over and over, for an hour or more.

Fortunately, I use the **BaudBandit** terminal program, which includes ARexx support. After consulting the ARexx documentation file, it took me only a few minutes to come up with this program:

```
/*
   ActFile.baud — BaudBandit File Activator

   Assign it to the F7 function command with the macro
   ‘F7 \mAddFile’.
*/

DO filenum=95 to 294

      Send '\r'                      /* send carriage return */
      Wait ‘(P)revious’          /* wait for the menu prompt */

      Send filenum||'\r'  /* send number of file to activate */
      Wait ‘(M)enu’                       /* wait for prompt */

      Send ‘a\r’                /* send “a” for “activate” */
      Wait ‘(Y/N)?’                       /* wait for prompt */

      Send ‘y\r’      /* send “y” for “yes, really activate” */
      Wait ‘(M)enu’                        /* wait for prompt*/

      Send ‘m\r’              /* send “m” for back to menu */

END
```

The program uses only two BaudBandit commands. The Wait command waits until the terminal receives the specified text string from the modem, and the Send command sends text to the modem as if you had typed it in. ARexx's Do command does the real work, repeating the same series of actions two hundred times, changing the file number each time. Using this script, I was able to activate the 200 files in just over 20 minutes. Best of all, once I started the process, I was free to do other things (like write this article) while the computer did all of the work. As with ADPro, you can launch a BaudBandit script either from a menu, or assign it to a function key using the program's keyboard macro feature.

Figure A.

```
Ticker(s): T
    Amer Tel & Tel

           Last   Change   LastCl   High   Low   Ask   Bid   Volume    Update
           ---------------------------------------------------------------------
T          52⅞    +1⅛      51¾      53⅛    52    27    32    1886100

  Ticker(s):
```

THE MORE THE MERRIER

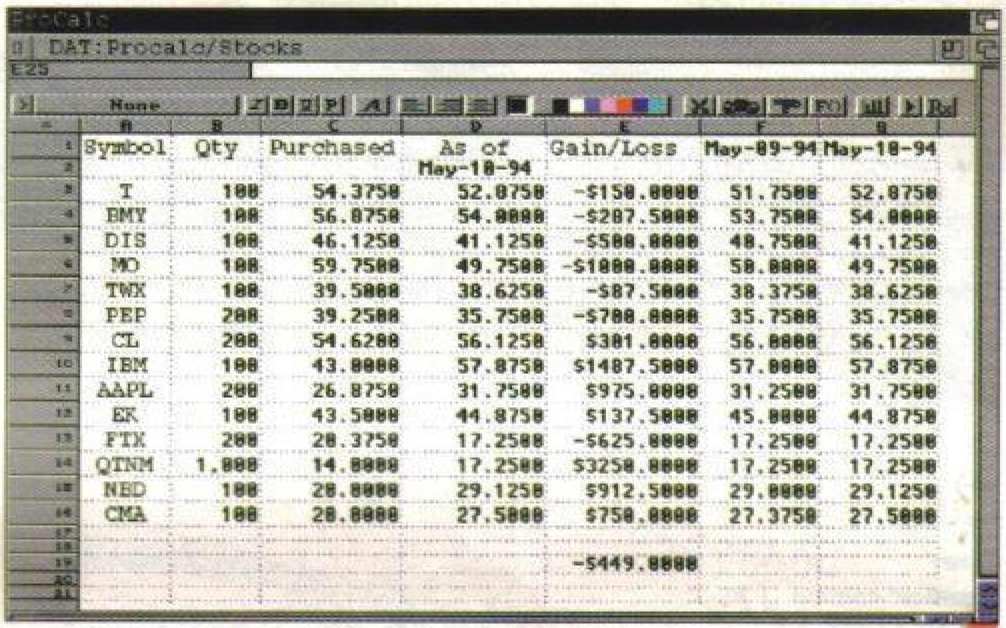
As powerful as ARexx macros are for controlling one program, they have even more muscle when you use them to combine the talents of two or more programs. Making software work together this way turns standard off-the-shelf programs into custom applications. With the power of ARexx, for example, you can turn a standard terminal program and spreadsheet into an automated stock-update service comparable to the expensive custom systems that track stock portfolios. (Such systems use a modem to automatically call an information service, download stock prices, and then enter the prices into a database or spreadsheet.)

I used *Gold Disk's* **ProCalc** as the spreadsheet for this project because it has excellent ARexx support. First, I created a spreadsheet containing columns for the ticker symbol for each stock, quantity purchased, purchase price, most recent price, and gain or loss (see Figure B). The rest of the columns are blank—that's where the downloaded daily or weekly closing price information will go. (One caveat: In operating ProCalc from ARexx, an A4000 or A1200 will crash once the ARexx script closes; my solution has been to leave it running.)

I used BaudBandit once again as my terminal program, this time to obtain the stock-price information from National Videotex Network. The stock-quote area presents this data in the format shown in Figure A (above).

Last month, I showed how to use ARexx to extract just the information you want (in this case, the price in the last column). So, it really shouldn't be hard to read the ticker symbols from the spreadsheet, request the price information with the terminal, extract the prices, and enter them into the spreadsheet (Figure B). The program shown in Listing 2 (next page) does just that.

The program starts with the Options Results command. This command allows BaudBandit and ProCalc commands to pass information back to the program in the special variables RC (return codes) and Result (numbers and text). Next, it checks to see if ProCalc is running. If ProCalc's ARexx port isn't there, the script runs ProCalc and loops until it finds the PCALC ARexx port. The Address PCALC section directs all commands that ARexx doesn't recognize to ProCalc.



	A	B	C	D	E	F	G
1	Symbol	Qty	Purchased	As of	Gain/Loss	May-09-94	May-10-94
2				May-10-94			
3	T	100	54.3750	52.8750	-$150.0000	51.7500	52.8750
4	BMY	100	56.8750	54.0000	-$287.5000	53.7500	54.0000
5	DIS	100	46.1250	41.1250	-$500.0000	40.7500	41.1250
6	MO	100	59.7500	49.7500	-$1000.0000	50.0000	49.7500
7	TWX	100	39.5000	38.6250	-$87.5000	38.3750	38.6250
8	PEP	200	39.2500	35.7500	-$700.0000	35.7500	35.7500
9	CL	200	54.6200	56.1250	$301.0000	56.0000	56.1250
10	IBM	100	43.0000	57.8750	$1487.5000	57.0000	57.8750
11	AAPL	200	26.8750	31.7500	$975.0000	31.2500	31.7500
12	EK	100	43.5000	44.8750	$137.5000	45.0000	44.8750
13	FTX	200	20.3750	17.2500	-$625.0000	17.2500	17.2500
14	QTNM	1,000	14.0000	17.2500	$3250.0000	17.2500	17.2500
15	NBD	100	20.0000	29.1250	$912.5000	29.0000	29.1250
16	CMA	100	20.0000	27.5000	$750.0000	27.3750	27.5000
17							
18							
19					-$449.0000		
20							
21							

Figure B. Layout for the spreadsheet.

The first ProCalc command loads the Stock spreadsheet. Then, the GetLastCol function finds the first empty column, and returns its column number in Result. Since ProCalc uses letters to identify cell columns, we must convert this number to one or two letters. We do this with the integer division and modulus operators, and the D2C function (which turns numbers into their letter equivalents). If this seems too confusing, you can use the MakeCell function included in the sample macros that come with ProCalc.

The next task is to place today's data in the As Of column in the spreadsheet (cell D2), so we'll know the date of the most recent quote. We use the PutCell command to enter the date from ARexx's Date() function. Next, we copy the date to the top of the empty column using the Copy and Paste operations. We copy the cell instead of just putting the information in the new cell, because the Copy operation duplicates the formatting and font information for the cell in addition to the contents. This ensures that the new cell is formatted as a date cell.

The next block of commands go to the BaudBandit program (its ARexx port is named BAUD). These commands are similar to the ones in the ActFile program (opposite). They send the text that is required to navigate the NVN menu, and arrive at the stock-quote area. Once there, we enter the program's main loop, the one that gets the stock prices and puts them in the spreadsheet.

The first step is to ask ProCalc to read each ticker symbol. These symbols are located in column A of the spreadsheet, in cells A3–A16. Using the GetLabel com- ►

Listing 2

```
/* BaudBandit Stock Update Program. Once you are logged onto National
   Videotex Network, it goes to the stock area, loads the stock spreadsheet in
   ProCalc, gets the stock prices, and enters them into the spreadsheet.

   The program is meant to be run from BaudBandit. Using the keyboard macro
   "F8 \mUpdateStock", I launch it by pressing the F8 key after I have logged
   onto NVN.

*/

OPTIONS RESULTS              /* Use Result and RC variables to get feedback */

IF ~SHOW('PORTS',"PCALC") THEN                    /* if ProCalc isn't running..*/
       ADDRESS COMMAND 'RUN <>nil: PRG:Procalc/Procalc '    /* run it */
DO UNTIL (SHOW('PORTS',"PCALC"))
        END                                          /*Loop 'til it shows up */

ADDRESS PCALC                          /* Address our commands to ProCalc */
'LoadSpread' "DAT:Procalc/Stocks"          /* Load the Stock spreadsheet */

'GetLastCol'                  /* Find the number of the first empty column */
price_col = RESULT+1
column=""                  /* convert column number to letters e.g. 27 = AA */
IF price_col > 26 THEN                 /* if number > 26, we need 2 letters */
       column = D2C( (price_col % 26)+64)               /* find first letter */
column = column || D2C( (price_col // 26)+64)             /* add last letter */

'Position' "D2"                        /* put today's date in As Of column */
'PutCell' DATE()
'Position' "D2"
'Copy'                                                           /* copy it */
'Position' column || 1
'Paste'                                /* paste date as title of empty column */

ADDRESS BAUD                          /* Address commands to BaudBandit */
Send 'go stocks\r'                             /* Go to stock area on NVN */

Wait '<E>xit:                                            /* wait for prompt */
Send '2\r                                            /* select price quotes */

Wait 'Ticker(s):'                                        /* wait for prompt */

ADDRESS PCALC                           /* These commands go to ProCalc */

DO row = 3 TO 16                          /* for each stock ticker symbol */
       'Position' "A" || row
       'GetLabel'                                  /* Get the ticker symbol */
       ticker=RESULT                               /* from the spreadsheet */

       ADDRESS BAUD                  /* These commands go to BaudBandit */
       Send ticker || '\r'                        /* ask for price of stock */
       Wait 'Ticker(s):'                          /* wait until it is given */
       Setmark ticker || ' '             /* search review buffer for price */
       GetLine                                    /* read price quote line */
       line_buf = RESULT                            /* move it to line_buf */

       ADDRESS PCALC                    /* Next commands go to ProCalc */
       PARSE VAR line_buf 8 integer 12 fraction 17 .         /*extract info*/
       IF (integer==' ') THEN integer = 0                      /* A blank = 0*/
       IF (datatype(integer,'N'))                          /* if it's a number */
              THEN INTERPRET 'price = 'fraction||'+integer'
                                     /* convert mixed number to decimal */

       IF ~(price=='PRICE') THEN DO                   /* If there's a price, */
              'Position' "D" || row                   /* go to As Of column */
              'PutCell' price                               /* and enter it */
              'Position' "D" || row
              'Copy'                                         /* Copy the price */

              'Position' column || row                /* Go to empty column */
              'Paste'                                       /* and paste it. */
       END      /* end of price entry */
END      /* end of update loop*/
```

mand, we copy each symbol to the variable "ticker," and have BaudBandit enter that ticker symbol as a price-quote request. We have BaudBandit wait until the prompt reappears, so we know that the whole price quote has been given, then we ask it to search its review buffer for the last line that contains the ticker symbol. That's the line with the price-quote information. We copy that line of text into a variable called line_buf, and use the ARexx parsing commands (discussed in Part One last month) to extract the information in the Last Price column. This appears as a mixed number (57⅜, for example) which we must convert to a decimal number (in this case, 57.375).

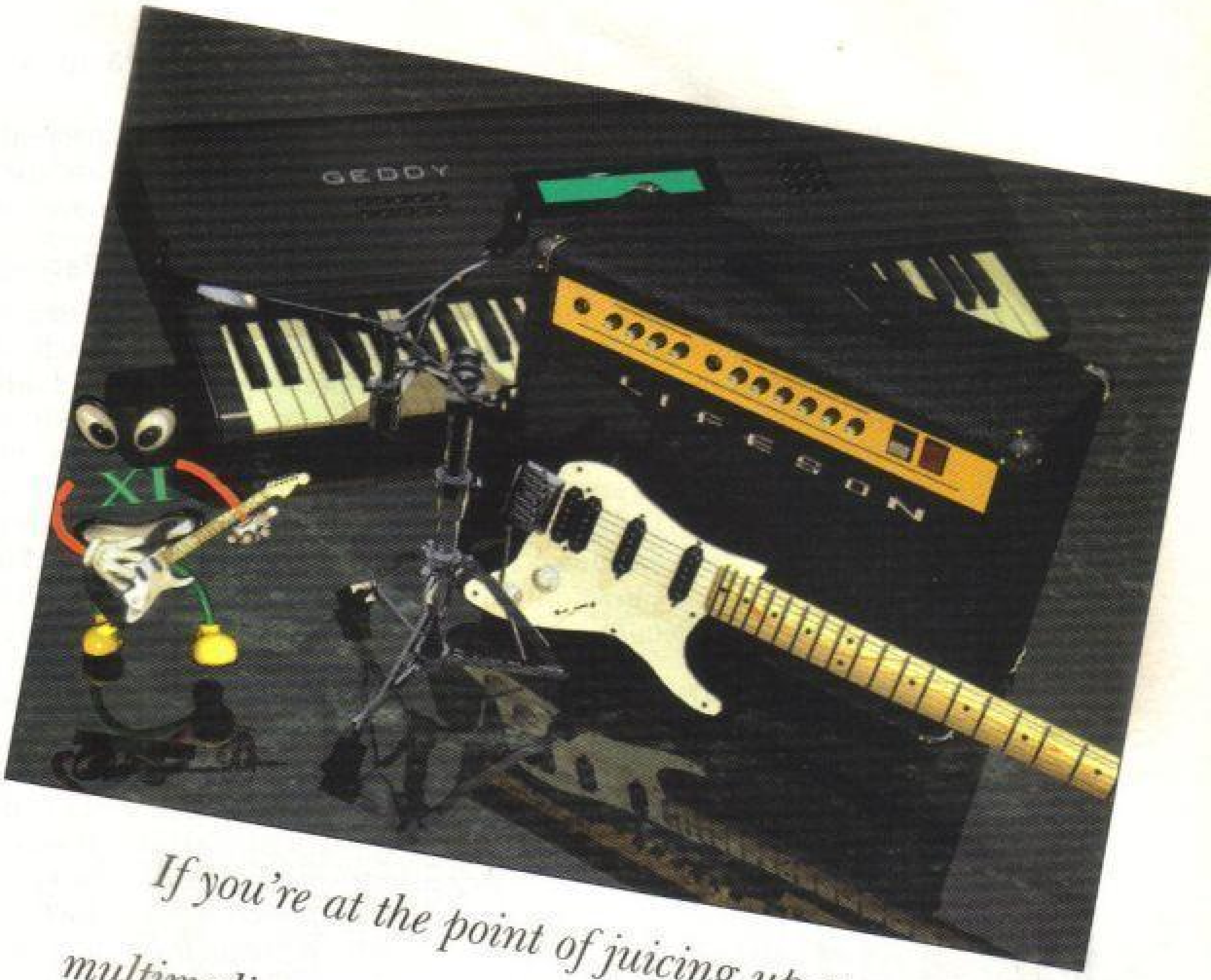
Once we have the price information, we go back to ProCalc. If the price is a valid number, we enter it into the As Of column, and then copy and paste it to the same row in the first empty column. We repeat the process until all 14 stocks are updated. If you switch to the ProCalc screen while this program is executing, you can watch as each price is entered as if by some ghostly hand!

While this script is fully functional, it is somewhat simplified for purposes of illustration. For example, it does not save the spreadsheet data after updating it, nor does it dial up NVN and log on. (Adding these features, however, would require only a couple more lines.) A more serious matter is the lack of error checking. The script does not check for accidental disconnects from the information service, or for other error conditions that can creep in from time to time. It is a good practice to check the return code for every command that has one, to make sure that the command was executed without a problem. We did not include this step because to do so would double the length of the program and make it harder to read. You will no doubt want to be more thorough when you create your own ARexx scripts. In our defense, we can only say that this version will work almost all of the time, and if an error does occur, the worst that happens is that one day's prices are not updated correctly.

CUTS THROUGH THIS ALUMINUM CAN!

The applications outlined above should give you some idea of how beneficial it can be to "program programs." They hardly cover the full range of possibilities, however. Once you start running your programs by "remote control," you will look at those programs in a whole new light. I got a lot of new ideas in the course of writing this article, and I'll bet that you can dream up many ways to simplify repetitive tasks, or even to perform whole new applications you hadn't thought of previously. Once you start wielding your ARexx, you'll find that, like the amazing ginsu, it has "a million-and-one uses!" ■

Sheldon Leemon, a computer/video consultant and instructor, is the author of two books and scores of articles covering the Amiga. He also serves as Amiga Forum Manager on National Videotex Network. Write to him c/o ***AmigaWorld,*** *Editorial Dept., 80 Elm St., PO Box 802, Peterborough, NH 03458.*



Sound Legal Advice

If you're at the point of juicing up your multimedia masterpiece with music and sound, you'd better become a legal eagle to avoid the discords and dissonances of copyright infringement.

Effective multimedia presentations incorporate both sound and music. Because both of these elements are typically created by others, you need to understand the circumstances under which you can legally use them. Misunderstandings about this area abound, so it is important that you know the basics of laws pertaining to copyright and intellectual property rights.

ADDING A DASH OF SOUND

The simplest area to grasp concerns sound effects. You can buy sound effects that come with a license allowing their use in perpetuity for any purpose except selling them as collections. They typically come on CD and range in cost from very expensive to quite cheap. These are the only sound effects you can use legally, other than sounds you create and digitize yourself.

You may not use sounds from a video, a TV program, or any other medium unless their use is specifically licensed to you. Note especially that the cheap collections of sound effects sold in record stores are specifically licensed for non-commercial home use; you cannot use them legally for multimedia purposes without licensing that use from the producer and paying an additional fee.

A TOUCH OF MUSIC

Music is much more complicated. Any unauthorized use of prerecorded music is against ►

By Geoffrey Williams

http://www.oldgamesitalia.net/ http://www.oldgamesitalia.net/

the law, and disregarding this can get you in a lot of trouble. You may not use just a few bars of music, or use just the music without the lyrics, or change the lyrics. You may not even use prerecorded public-domain songs without securing specific permission and paying a fee. There are large organizations that seek out unauthorized use and go after the offenders to make an example of them. It is not a pretty picture, and violations could put you out of business.

So how do you get music you can legally use? There are five basic ways: Hire a composer, use licensed production music, create your own with a computer, use licensed commercial music, or find music that's in the public domain. These options may seem straightforward, but the details can be tricky.

HIRING A COMPOSER

Hiring a composer may seem like an expense that is out of the question, but it can be a very cost-effective solution under some circumstances. It is especially helpful if you are not an expert at choosing appropriate music (a task that takes time, even for experts). A good composer can write something that will fit your needs. Of course, you still need to have that music recorded, but as many composers use MIDI systems that allow them also to play the score, this may not be a problem. If you want a lush orchestral sound, however, hiring an orchestra can be quite expensive. For most projects, a MIDI studio will be more than adequate.

It is necessary to draw up a contract with the composer that exactly defines your intentions for the music. If you are buying the rights for your exclusive use, expect to pay a lot more. If the composer retains the rights, you must specify how you want to use the music. Are you paying only for one-time use in a live presentation? If that is all you have agreed to, then the use of that music on a tape you distribute later may be a copyright violation. If you license it for use in a specific multimedia project and then reuse it on another project, that could also be a violation. Your rights to use the music must be specifically spelled out—you have no rights other than those agreed upon.

PRODUCTION MUSIC

Using production music is possibly the easiest way to go. Such music is recorded especially for use in video and other productions, and you purchase a license to use it in your projects. There are two types of production music: needle-drop and buy-out. With needle-drop, you pay a set fee based on how much music you use in each production. A variation on needle-drop, called a blanket license, bases the fee on the overall length of your production rather than on the number of pieces and their length. Both types of agreement are used typically with top-of-the-line-production music libraries, where you will find a huge variety of fully orchestrated music.

With buy-out music, you pay a one-time fee to purchase the library, which you can then use in perpetuity. There may be some restrictions, however, such as not being able to use it for broadcast television or film production. Buy-out music can be good or mediocre, and in general the libraries tend to be smaller, with less variety. If you prefer not to track each use of the music and still want top-of-the-line quality, many of the better collections issue an annual license that lets you use the music as much as you want for a year.

COMPUTER ASSISTANCE

If you are a composer, you can use a computer to write and perform your own music, but there are ways a computer can also help the rest of us. Be careful, however: One thing you may not do is to sample commercial music and digitally rearrange it or use bits and pieces. There have been test cases involving rap music that have pretty much settled this issue.

Typically, music libraries are available on CDs, and each song usually comes in several different lengths,

MUSIC COLLECTIONS & RESOURCES

Most companies will provide you with a demo CD or samples over the phone. The typical price per CD for buy-out music is around $50. The best way to find out what the companies offer is to call them.

Airworks. Developers of TuneBuilder. 313/645-5730.

BZ Rights and Permissions Stuff. *The Mini-Encyclopedia of Public-Domain Songs*, plus sheet music for 650 PD titles. 212/580-0615.

Creative Support Services. Buy-out music and sound effects. Fourteen libraries, 85 CDs. 800/468-6874.

Euroscene-1. A CD-ROM with hundreds of MOD files, it comes from Finland, but is available here from ***NorthWest Public Domain***. 206/351-9502.

Fresh Music Library. Buy-out music. 800/545-0688.

Gene Michael Productions. Buy-out music. 800/955-0619.

Killer Tracks. Has libraries that support Airworks' TuneBuilder. One of the major providers of licensed music. 800/877-0078.

The Music Bakery. Buy-out music; regular new issues on CD. 800/229-0313.

Musi-Q Productions. Buy-out music. 305/572-9276.

Blue Ribbon SoundWorks. SuperJam! Styles Collections. Additional styles for SuperJam are available in the categories of Movie Soundtrack, World Music, Dance Mix, Pop/Rock, Classical, and Cutting Edge, each with ten styles. 404/315-0212.

TRF Production Music Libraries. A huge collection of more than 4000 discs, available in 12 customizable libraries. Licensed music. 800/899-6874.

such as ten-second, thirty-second, and sixty-second versions. A new product called **TuneBuilder** (***Airworks Media***) works with specially digitized music libraries and can algorithmically recompose a song sample into any length you want, while preserving its musical integrity. This type of technology may soon be available for the Amiga (it also works under Windows and on the Mac). Currently, it comes with Airworks Media's music library. (The 12-disc collection is $1295 for in-house use and $5499 for broadcast buyout; in-house use of a single CD costs as little as $199). ***Killer Tracks*** plans to release a version of its outstanding library with TuneBuilder, and other music-library providers also intend to make compatible versions of their libraries.

The Blue Ribbon SoundWorks, the leading developer of MIDI sequencing software for the Amiga, is also the creator of **SuperJam** ($149), a product that lets you create music even if you know nothing about composition. It won't create a Grammy-award-winning song, but it has a lot of built-in artificial intelligence that allows you to play along with predefined rhythms and styles, and it automatically converts your noodling into something that makes sense musically.

For those with a little more musical knowledge, SuperJam is jam-packed with a lot of sophisticated features that give you an endless amount of control. Using BlueRibbon's Turbo technology, you can play 12 simultaneous voices directly out of the Amiga's sound chips, although the sound quality would be much better if you use MIDI or Blue Ribbon's **One-Stop Music Shop** sound card. SuperJam has enough powerful features so that you can use it to create very accurately timed music for multimedia and video.

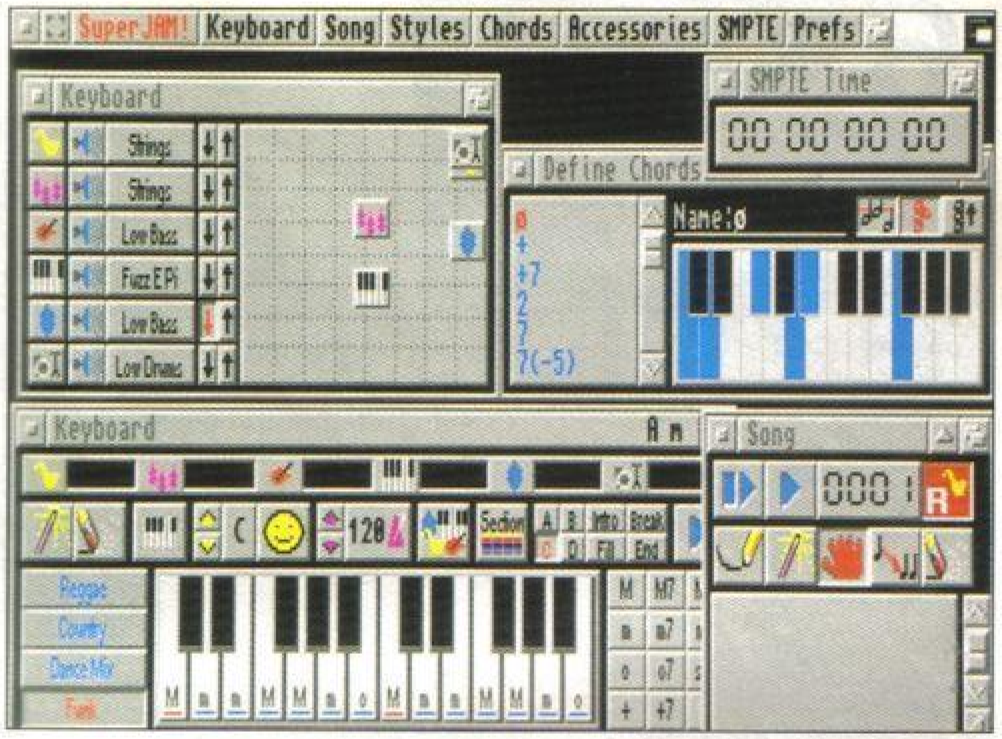
COMMERCIAL MUSIC

If you want to use commercial music from a favorite album in your latest multimedia project, I suggest you forget it. If you are creating a project for distribution, a lot of record companies are not even set up for this type of license agreement. Even for a production that will be shown live only once, you must pay a license fee to the composer, another to the record company or whoever owns the rights to the recording, and still another public-performance fee to ASCAP (American Society of Composers, Authors and Publishers) or BMI (Broadcast Music Incorporated). (If the music is played as background and not used with video or other visuals, you might have to pay only the ASCAP/BMI performance fee.) You may expect to pay about $5000 to $6000 for a single performance. Also, it can take weeks to secure permission, and you may have to pay a service to hunt down all of the proper copyright holders.

If you must use commercial music, I suggest you invest $75 for a copy of the *Multimedia Law Handbook*, by J. Dianne Brinson and Mark F. Radcliffe (***Ladera Press***, 1994). It explains the many complexities of using commercial music and other copyrighted materials in multimedia productions, and it offers a lot of other useful legal information.

PUBLIC-DOMAIN MUSIC

A lot of music is available in the public domain, which embraces anything written before 1918 or anything specifically placed in the public domain since then. Just because a song is PD does not mean that you can freely use a recording of it, although securing the rights is a lot easier and significantly cheaper than in the case of popular commercial music. You can hire someone with a music studio to record the piece for you, but make sure that you reach an agreement allowing you to use the recording in any projects you want for an unlimited amount of time.



The Blue Ribbon SoundWorks' SuperJam can help even wooden-eared multimedia producers create music for their presentations.

The best source for finding what music is in the public domain is a $299 guide, *The Mini-Encyclopedia of Public-Domain Songs*, available directly from ***BZ Rights and Permissions Stuff*** (212/580-0615). It lists 650 titles of popular music alphabetically and by category, along with other information about the songs (such as whether there are contemporary arrangements that are not in the public domain). While sheet music for most of these songs is readily available, you can also get it directly from BZ Rights.

You can find another source of PD music, called MOD files, through CD-ROM collections and online services. MOD (Music Modules) is a popular music format on Amigas and PCs that uses digitized samples to create good-quality music in a relatively small file size. There are thousands of MOD files floating around, but that does not necessarily mean that you can freely employ them in a project, even if the author puts no restrictions on their use. In order for you to use a MOD file, the person who created it must have both written the music and given permission for its use. Many MOD files are versions of commercial songs, and using them may violate the original composer's copyright.

There is nothing like music and sound effects to enhance a multimedia project. Just make sure that you are on sound legal ground when you use them. ■

Geoffrey Williams, director of Creative Business Presentations, is a frequent contributor to computer-video publications. Write to him c/o ***AmigaWorld,*** *Editorial Dept., 80 Elm St., PO Box 802, Peterborough, NH 03458.*

ACCENT
ON
GRAPHICS

Abstract Sculptures from Spheres

66

◆

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

◆

By Joel Hagen

AS ELEGANT AND popular as today's 3-D programs are, they remain one of the most difficult categories of software to master. With a paint program, a beginner can see results after the first few strokes of the mouse. With 3-D software, quite a bit of manipulation, button pushing, and rendering time is required before an image actually appears on the screen. Beginners are often at a loss for what to do after they have rendered a floating ball. This column will draw ideas from traditional sculpture to suggest a line of experiments beginners might try in getting started with Amiga 3-D.

When we think of 3-D computer graphics, what often comes to mind are elaborate images of cities, dinosaurs, spaceships, and so forth. For a beginning 3-D artist to attempt a triceratops as a first project is to invite frustration. That artist will be fighting multiple battles—not only learning challenging software, but also trying to model complex shapes that have a "correctness" and an "incorrectness" associated with them simply because we know what they should look like.

For a first series of 3-D projects, I suggest that instead of representational objects you try abstract sculpture. There is no inherent "correctness" to the form of an abstract shape. This frees an artist to focus on the features and rituals of the software. For the moment, forget about texture maps and animation and just sculpt.

DIGITAL CLAY

There is probably nothing more basic to the concept of sculpturing than to take a lump of clay and begin shaping it. You can squeeze that lump, stretch it, bend it, flatten it, and twist it. As you do, you begin to notice pleasing shapes. You preserve and perfect these shapes. This activity is art. Let's use the computer to try the same basic approach.

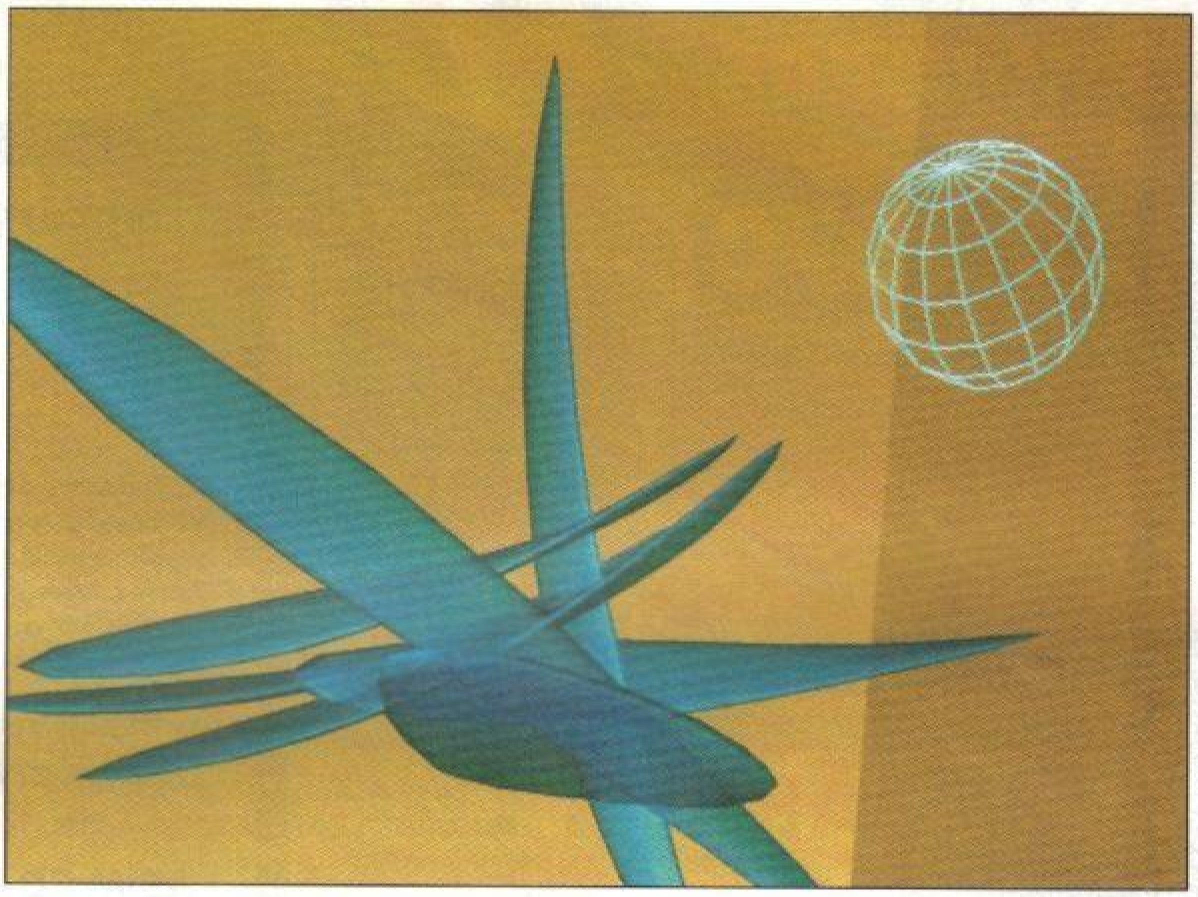
For this exercise, I used Caligari (Caligari Corp.) for its clean, perspective-view interface. The terminology I will use is specific to Caligari, but the concepts are general, and you can do the same experiments in any good 3-D program. Begin in the perspective view and load a sphere from the list of "primitives." In 3-D modeling, a primitive is a basic form such as a sphere, cube, or cylinder from which more complex objects can be assembled. For our purposes, look on the primitive as a lump of clay. Everything you make in this abstract-sculpture project will begin as a simple sphere primitive like the one shown in the illustration.

To follow the example illustration accompanying this article, enlarge the sphere a bit by selecting Scale and Obj and dragging the mouse with both buttons depressed. Next, flatten and stretch the sphere into a blade shape by experimenting with constraining the scaling to one axis at a time. In Caligari, do this with different combinations of the X, Y, and Z buttons as you move the mouse. When you have stretched out an interestingly proportioned blade shape, bend and twist it to give it more dynamic character. Each program has its own method for organically reshaping objects. In Caligari this is accomplished with the Deform feature found in the Point Edit tools.

When you select the Deform button, a box appears around your object. Drag the mouse in the work area to subdivide the box for finer control, and then use the cursor to select all vertices on one end of that box.

Selecting the Obj and Move buttons, experiment with constraining the X, Y, and Z buttons while you drag the mouse in the workspace. The box will move according to the axis settings, and the blade object within will be pulled along with it. When you release the mouse button, the surface of the blade will smooth out along its length. Switch to the Obj and Rot buttons, and rotate the end of the box a little. When you are satisfied, hit the Erase button twice to clear the Deform box. The

Instead of trying familiar, representational objects, novice 3-D artists might do better with abstract sculptures first—and here's how to get started.



All elements of the abstract sculpture above were created by deforming the simple sphere shown in wireframe. Simplifying object creation allows beginners to focus on 3-D software principles, scene composition, and lighting.

blade should now have a graceful bend and twist. Save the object.

SCULPTING CALISTHENICS

In traditional sculpture, it can be interesting to use multiple similar elements to compose a finished work. For example, several different lengths of pipe might be welded together to create an interesting composition. In a way, this is like drawing in three dimensions, where the composition is as much about lines in space as it is about volume and shape.

To continue your computer sculpture, select the Tools button and use Copy to duplicate your bent blade. Use Scale, Move, and Rot Obj to stretch, move, and rotate the new blade into an appealing visual relationship with the original. Repeat this to duplicate, stretch, and rotate a third blade, then a fourth and fifth. The button tools make it easy to quickly produce many blades, each unique and positioned where you decide. For contrast, you might add another sphere deformed differently than the blades for a visual accent. When you like the arrangement, "Glue" the pieces together so they are thereafter treated as a single object.

At this point you might want to create a backdrop for the scene before rendering it. In the illustration, two rectangles are positioned upright at right angles to each other and saved as walls to be placed behind the sculpture in the rendering. Typically, 3-D software allows you to design objects as wireframes, and then to render the actual illustration in a separate operation. In Caligari, switch to Scene and Add Objects to compose a "snapshot" of your sculpture. Position the walls behind the sculpture and rotate it to a pleasing orientation. Save this scene, and you can always return to that view of the object group.

For the final rendering, specifying object attributes and lighting can make or break the image. No matter how interesting your object may be, ineffective lighting can ruin its appearance. Set up at least three lights. Use two on the sculpture—one high and one low. Place an additional light to illuminate the back walls so the sculpture stands out in contrast. (Refer to "Accent" #61, Mar. '94, p. 70, for more hints on lighting.)

Specifying object attributes lets you have fun with the unique power of the computer. Here you can change the transparency of the object, its shininess or dullness, and its color. Combined with the shading method you select, these attributes determine whether your sculpture appears to be made of glass, bronze, or plaster. In the illustration, the sculpture's transparency is set at about 20% to allow all elements to show through. The angled walls add to the visual dynamics of the scene, and Local Lights combined with Phong shading create a varied illumination. High shininess and specular reflections help the light delineate edges. I rendered the illustration in Caligari24's Broadcast Render mode to GVP's IV24 framebuffer.

Abstract sculpture projects like this one allow you to focus on mastering the features of your 3-D software without the additional burden of creating representational objects. Once you are comfortable with modeling and rendering principles, explore representational objects and apply the same concepts of scene composition and lighting. ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

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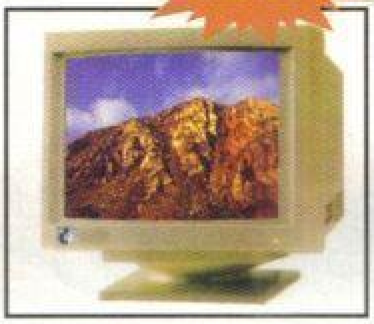

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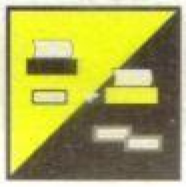

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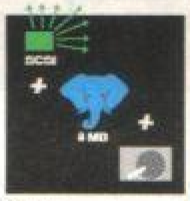

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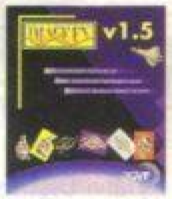

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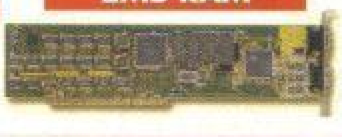

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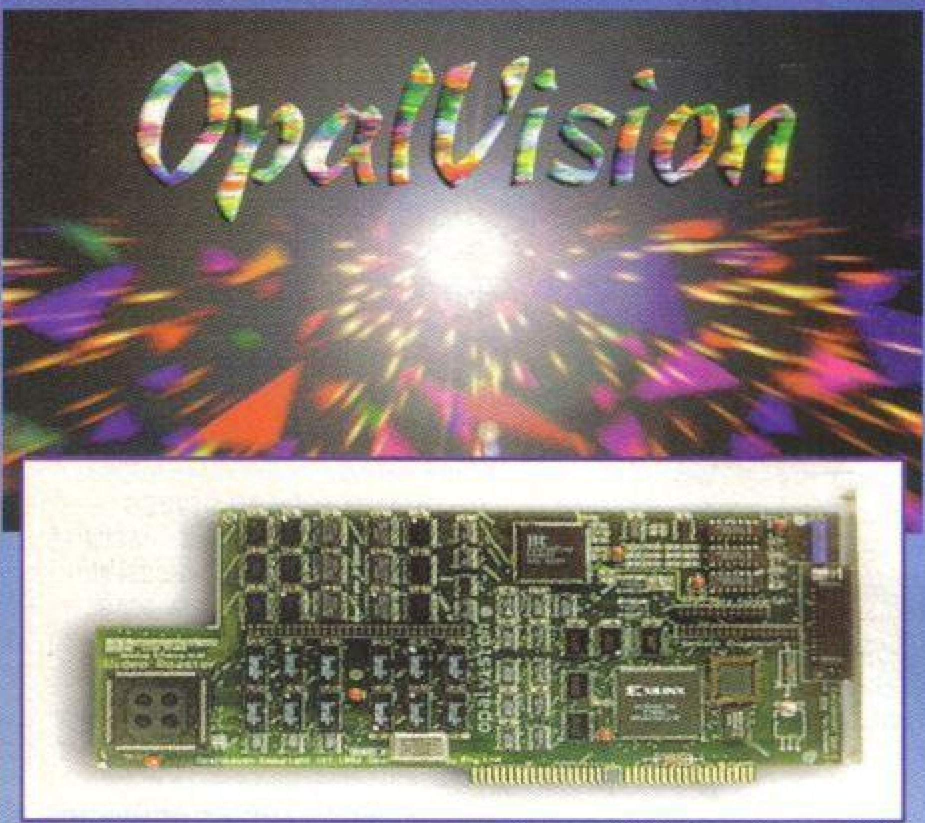
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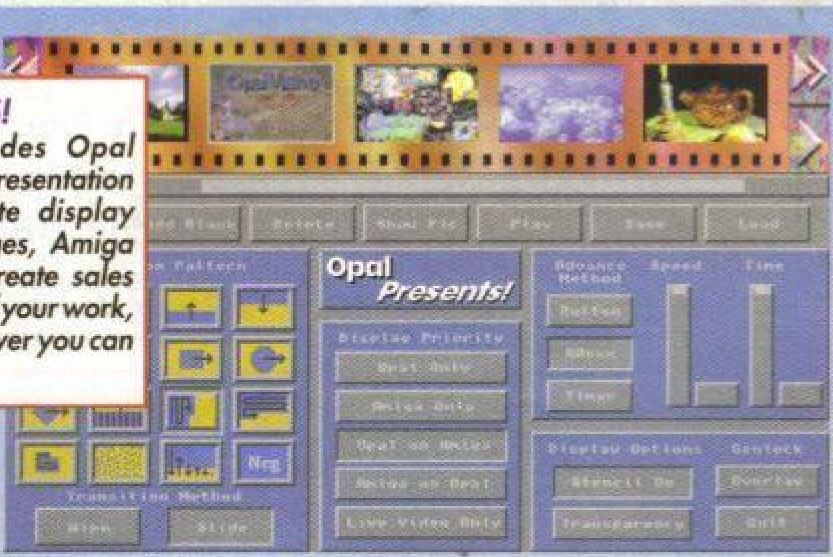
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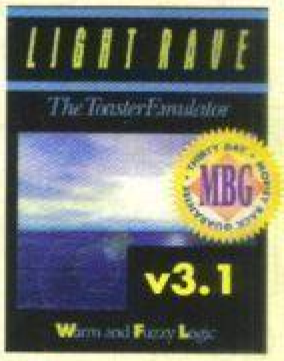

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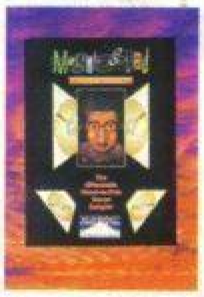

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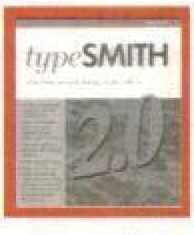

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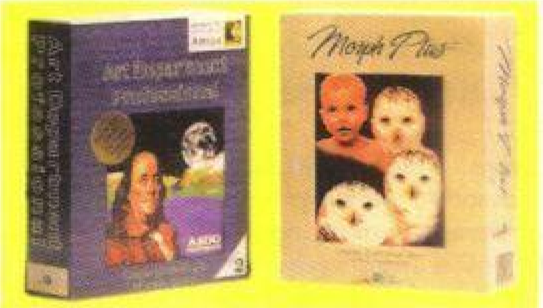

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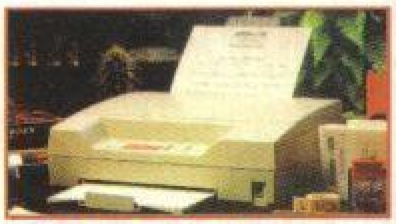

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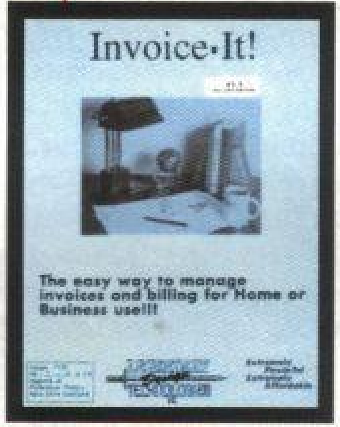
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Video in Focus

PRACTICAL ADVICE FOR AMIGA VIDEO PRODUCERS

By Paulo de Andrade

#3—$uper Results—For Less

Does it seem that you must own every piece of the latest hardware and software to produce quality work? Do you fear that an inability to afford all those products will render your services uncompetitive? That's just not so!

Recently, I coproduced a couple of television commercials targeted at kids. Our goal was to keep these commercials very dynamic, so I did not want to have boring CGs slow down the pace. Color-cycling the text seemed the perfect solution. Having several expensive tools at my disposal, I began to search for the best one to do this task. After a lot of frustrating experimentation, I turned to the program that had been one of my most used tools for several years—DeluxePaint. In very little time I had the titles I wanted, cycling colors in real time, overlaid on the desired video sequences via a simple genlock. Had I used the more expensive tools, it would have taken me a lot longer to achieve the same results.

MAKING MONEY

When I bought my first Amiga 500, I used to carry it from one post house to another. I made quite a bit of money by making real-time animations and nice CGs available—instantly—to several producers. You can do the same thing today. You can help spice up other people's presentations and, if you are sufficiently talented, even do work good enough for broadcast. And you can do it with a very basic system. An A500 with one megabyte of RAM and a genlock such as GVP's G-Lock or Digital Creation's Supergen will suffice.

A genlock serves several purposes. It encodes the Amiga's RGB signal into composite NTSC video (or component Y/C) so that you can record it on videotape. It also syncs your Amiga with other video equipment and lets you superimpose Amiga graphics over live video—a feature essential for character generation.

If you don't think you will ever use your Amiga as a character generator, then you can substitute Digital Creations' DCTV for the genlock. This unit allows you to play back animations with millions of colors in real time, surpassing the Amiga's native color modes. It will not, however, let you superimpose Amiga graphics over video.

You can also make some money by manipulating images on the computer. DCTV acts as a slow-scan digitizer, too, letting you grab images from videotape or a camera. Other low-cost digitizers do the same.

SELLING YOUR SERVICES

When you are working with a basic Amiga system, you should know what your limits are. Be realistic. Trying to sell services you are not capable of delivering can totally ruin your chances for success. If a client needs a fancy 3-D animation for a national television campaign, you know you won't be able to deliver it with such a system. So be sincere. But take the opportunity to explain and show what else you can do.

Corporate presentations and training tapes use lots of graphics, charts, and text pages. This kind of work is ideal for your basic Amiga system. With inexpensive software, you can go beyond the ordinary and offer your clients animated charts and graphics and sophisticated CG pages, with fancy transitions. Believe it or not, even some of the most advanced post-production houses cannot deliver this type of service as easily as you can, and consequently, they must charge a lot more for the extra time they must spend. If you can create some slick demo presentations, you can bet many people will be interested.

Small production facilities, videographers, and cable stations are ideal targets for your services. They often lack more sophisticated equipment and may find your Amiga system very useful. The real-estate company down the road may well benefit from a local TV or cable show that displays their properties. You can easily incorporate digitized images of houses on CG pages, and flip through them with slick transitions. Add professional narration, and you have a finished product that is both effective and affordable to produce. Add animation, and you have a product that is much more interesting and certainly above average.

BE PROFESSIONAL

The high price tag of some systems does not necessarily guarantee great results. But with a low-cost system, you'll want to be very professional to compensate for any equipment handicaps.

Try always to use high resolution to avoid jaggies and artifacts. Make sure your genlock or encoder is properly adjusted so it can deliver good-quality, distortionless video. And avoid NTSC color problems by using no more than 85 percent of possible color levels. This ensures that your colors remain legal and don't cause excessive bleeding or crawl.

NOW AS THEN

Eight years ago, when even the simplest dedicated character generators cost several thousand dollars, you could buy an Amiga 1000 with built-in composite output (not the best, but it was there) and nice character-generation software for a fraction of the price of a traditional CG.

Today you can do many video tasks much better and more easily—still at the same low price! While video *has* arrived on other personal-computer platforms, it is easier and less costly to get high-quality results from Amiga genlocks.

There are many possibilities to explore with a low-cost Amiga system. And if you are successful, you may end up with enough money for new add-ons! ■

*Paulo de Andrade is president of Digital Reality, an Amiga-based broadcast-video and 3-D animation company in Seattle. Write to him c/o **AmigaWorld**, Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

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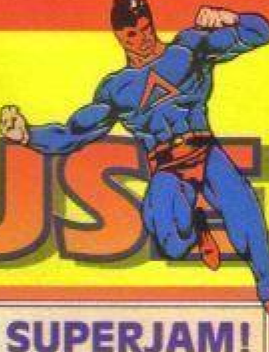

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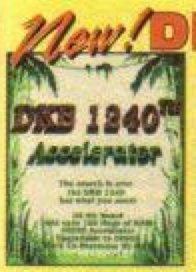

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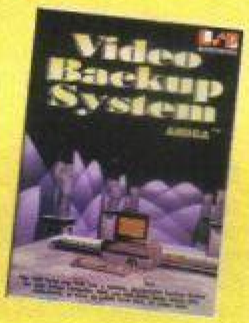

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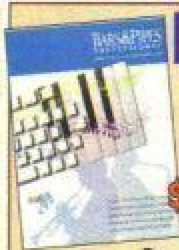

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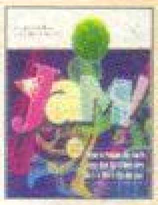

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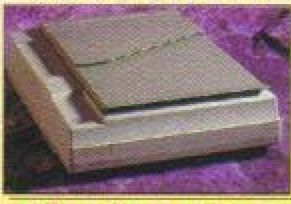

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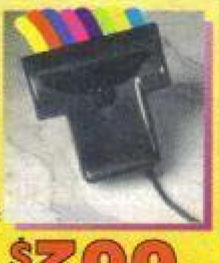

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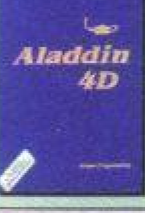

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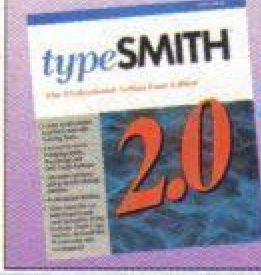

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Built in SCSI-2 Hard Drive Controller	YES	NO	YES
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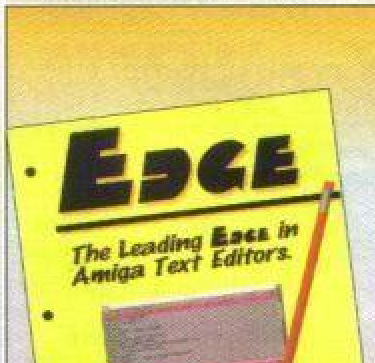

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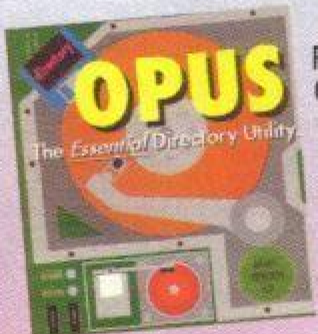

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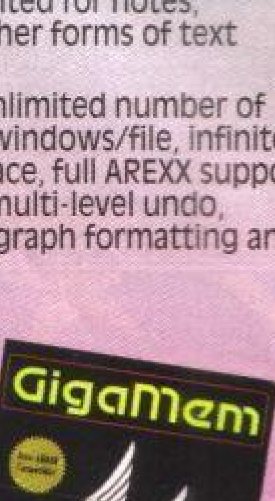

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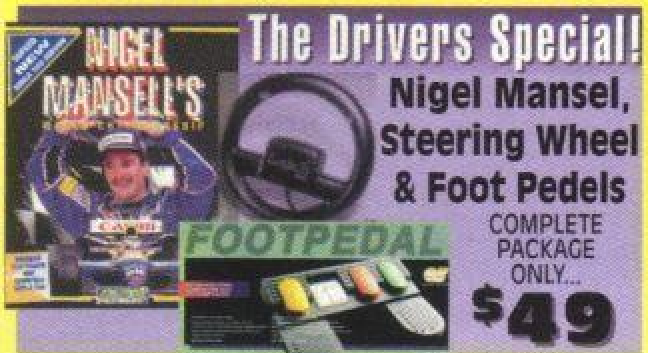

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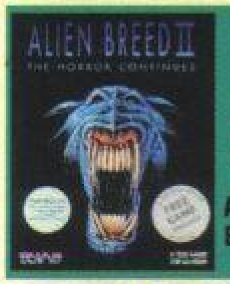

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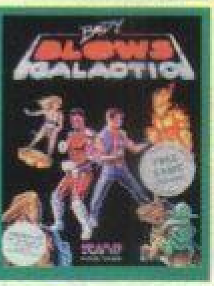

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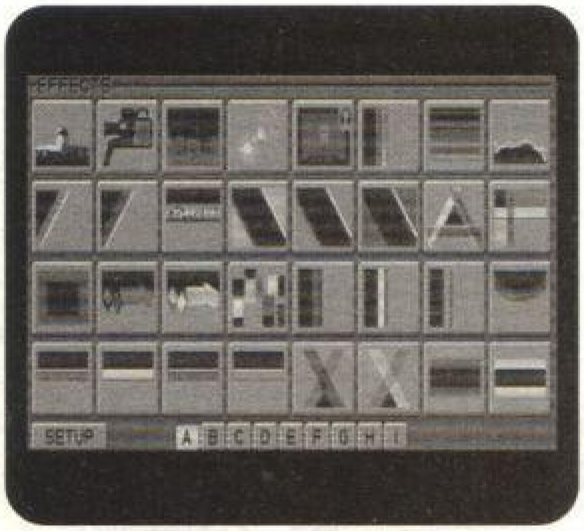
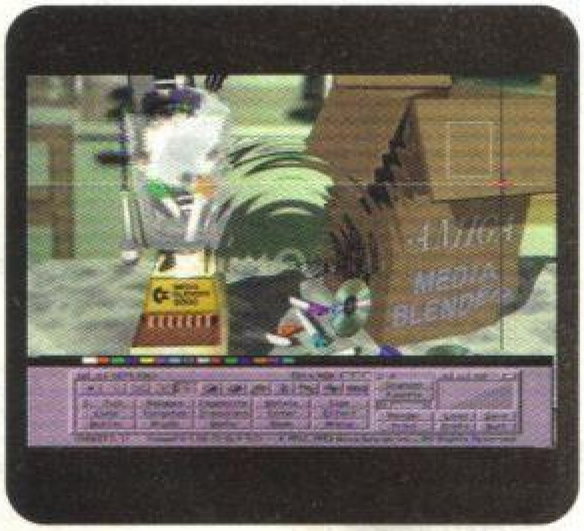
From p. 15.

fects use a "magic cookie" that ToasterFX relies upon. The spherical warps are an example of digital effects that can cause problems—easily remedied, however, by reloading the project file.

The ToasterFX preview is limited to using only DV1, so if you're working on DV1 and then perform a Switcher transition with DV2, ToasterFX internally continues to work with a copy of DV1.



Spice up your wipes with Swipes!.



Bring ImageFX to your Toaster with ToasterFX.

Any operation updates only the area affected and causes the internal copy of DV1 to merge with what were the contents of DV2. The preview cannot be switched to or swapped with DV2. Also, you cannot load the contents of DV2 (or DV1 when not in Toaster preview mode) into ImageFX. Byrd's Eye does provide, however, a "beta" scanner module for retrieving the contents of either buffer. You use it only at your own risk, but it functioned well for me.

NOTEWORTHY PERFORMANCE

The other mode of operation with ToasterFX is to use ImageFX with one of the other standard preview modules (such as HAM8) and employ the Toaster framebuffers for rendered output. You cannot use the Toaster for both preview and render at the same time, because preview is already rendering directly to DV1.

ToasterFX performed flawlessly, and my only disappointment was the limitation of its use to DV1. I did find the ImageFX interface tiring to view on an NTSC video display, as I was running it in interlace mode to take up less screen space. The manual recommends noninterlace as easier on the eyes. ToasterFX may seem a bit expensive, but it's much cheaper than any of the other 24-bit cards that accommodate ImageFX.

—*Mark Thompson*

SAMPLE WRENCH 2.1

***dissidents*, $299.00**

All Amigas.
1.3/2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator recommended.
***Minimum system:* 1MB, hard drive.**
***Recommended system:* 2MB, supported MIDI sampler, accelerator.**

Powerful 16-bit sample editor.

The Sample Wrench (Wrench for short) is designed for musicians with 12- or 16-bit MIDI samplers and multimedia producers wanting to get the most out of the Amiga's internal audio. It's a solid 16-bit audio editor that offers a wide range of file and transfer protocols.

MIDI-IN/SCSI-OUT

Commodore's Installer painlessly moves the Wrench setup (including scaled-down and accelerator-only versions) to your hard disk. (Surprisingly, the program even runs under AmigaDOS 1.3.) The 3-D-style user interface is easy to comprehend. A click-to-front option allows a window to automatically pop to the top when selected, which is handy when several editors are open simultaneously. For time-intensive operations, a "percent done" display tells you whether to stick around or take a walk.

In addition to supporting the MIDI-sample-dump standard, Wrench has dedicated drivers for Akai S612/S700/S900/S1000/S1100, Casio FZ-1, Roland S-50/S-70/770, Ensoniq EPS and 16+, Yamaha TX16W, Emu Emax, Korg DSS-1, and Sequential Prophet 2000. Peavey's DMP SX, SXII, and SP are supported via the SMDI standard to interface via SCSI, which is some 50 times faster than the agonizingly slow MIDI transfer rate. I wish that the SCSI interface of the EPS 16+, my main sampler, had also been given SMDI support to give a similar performance boost. I was also disappointed that I could not load or save multisampled layers and wave names or issue advanced commands to the EPS. On the other hand, owners of SunRize AD516 boards get 16-bit audio playback right on the Amiga.

Wrench reads and writes AIFF and Sound Designer Type 1 (popular Mac formats), single-octave 8SVX, SMPL (dissidents' nonproprietary format), and MSW1, an almost "raw" bit format with minimal header information. Most noticeably lacking is Windows' .WAV sound format.

In addition to the Amiga's internal serial port, Wrench can use the MIDI ports in The Blue Ribbon SoundWorks' Triple Play and One-Stop products, but only some drivers currently support this option.

WAVEFORM EDITING

Wrench's flexibility is evident in its design. You may edit up to eight different waves in separate windows and—with cut, copy, and paste—move data between them and six clipboard regions. Resizable windows allow for horizontal and vertical scrolling and zooming. A time axis shows seconds, minutes and seconds, words, SMPTE frames or time (all rates), and the amplitude scale is displayed in percent, absolute value, or decibels.

The customizing doesn't end there: You can also view Fast Fourier Transforms (FFT), which aid in visualizing timbral changes over time. Moreover, you can plot a graph in its own window, depicting amplitude as a function of time for a number of frequencies, and—if you pick your options well—you can produce a tight web with a 3-D appearance.

Window-border gadgets give quick access to sending, receiving, and triggering samples. You can perform the triggering with precision using the piano keyboard in a separate window (127 pitches) that also provides for the editing and display of note ranges, root-key definition, and sample fine tuning. A third option—the Amiga's keyboard—lets you play up to two samples at a time.

The 18 items in the Functions menu provide access to the digital-signal-processing (DSP) sound-editing features. Powerful options include fully parametric equalization, amplitude and time compression, pitchshift, and an arbitrary transfer-function generator. An envelope generator offers a trace function and allows freehand drawing. I found the enveloper and EQ to be effective tools for most of my needs.

The Wrench also provides advanced ►

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28MHz, 33MHz, 40MHz Versions	YES	NO	NO	NO	NO	NO
28MHz Upgradable to 33 or 40MHz	YES	NO	NO	NO	NO	NO
Expandable onboard to 128Megabytes	YES	NO	YES	YES	NO	YES
Built in SCSI-2 Fast Hard Disk Controller	YES	NO	NO	YES	YES	NO
Uses Industry Standard Amiga SIMM Modules	YES	NO	YES	NO	NO	YES
Uses any Combination of SIMMs	YES	NO	NO	NO	NO	YES
Allows use of the Memory from the Amiga	YES	NO	YES	NO	NO	YES
Uses a Zorro III slot	NO	NO	NO	YES	YES	YES
Memory Speed Much Faster than Amiga Ram	YES	YES	YES	NO	NO	NO
Works in Amiga 3000	YES	YES?	NO	NO	NO	Yes
Zorro III DMA or Buster Problems	NO	NO	NO	NO?	YES	?

e speed of Ram installed on a Zorro III Memory board is about 30 to 40% slower than the Ram on the motherboard. [1]GVP uses custom memory modules that c t up to 1.5 times as much as the standard memory used on WarpEngine. This memory can only be used on a GVP accel. Bd. [2]The X-Calibur requires you to insta IMMs at a time. [3]The FastLane uses old 8Bit memory modules that must be installed 4 at a time.

MacroSystem Development, Inc.

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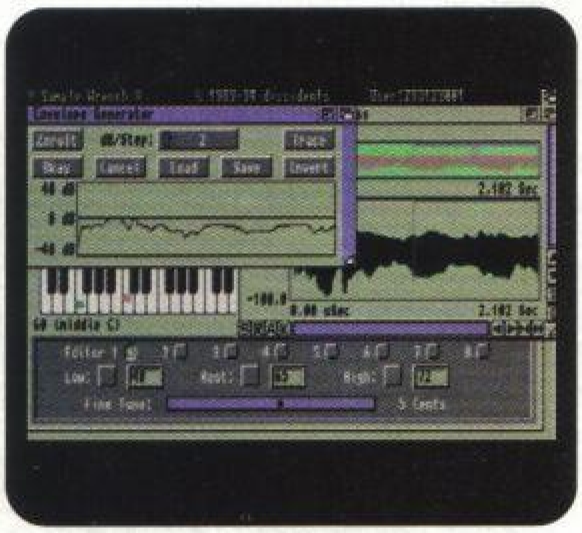
tools for the mystical craft of "looping," familiar to those who venture beyond one-shot sampling; there's a special looping window and several cross-fade functions. A nice interactive feature is that you can change loop points during playback.

Also, the Wrench fully supports ARexx in command mode and can send and receive ARexx commands. There are example scripts to integrate with Bars&Pipes and SunRize's audio boards. You can even take the drudgery out of such mundane tasks as converting entire sound libraries from one format to another. ARexx greatly enhances Wrench and distinguishes it from similar products on other platforms.



Just a few of Wrench's many controls.

COMPLAINTS IN A MINOR KEY

My gripe list is short. Some parameters, such as the manually entered frequency in the EQ, are not easy to handle, and changes in one window don't automatically update related windows—the key range, for instance. Furthermore, the custom requesters can be obscured and trashed when their parent window is sized too small.

The full-size manual—well organized, informative, and sprinkled with humor—includes a tutorial, a glossary, and an index. It is not updated with the 2.1 enhancements, but these are detailed in a separate section. The online manual is simply a set of plain ascii files identical to the printed version; no browsing utility is included.

There are a lot of reasons to consider Sample Wrench, not the least of which is its support for the SMDI standard that allows sample transfers through SCSI ports. If your current sampler's tiny LCD display or limited editing features are driving you nutty, or if you're ready to perform sample format conversions, this is one Wrench to keep within reach.

—Darius Taghavy

TRANSITION

DarkSoftware (distributed by Better Concepts), $59.95

All Amigas.
2.0/3.0 compatible.
Hard-drive installable.
Not copy protected.
Accelerator recommended.
Minimum system: **4MB, 68020.**
Recommended system: **4MB, hard drive, accelerator.**

Inexpensive cross-platform image-conversion software.

DarkSoftware's Transition is designed for Amiga users interested in a batch cross-platform image converter who don't need the speed, the options, or the pricetag of a full-blown image-processing package. The program's limited image-processing capabilities include scaling, gamma, brightness, and the ability to turn an image into an emboss.

GENERIC APPEAL

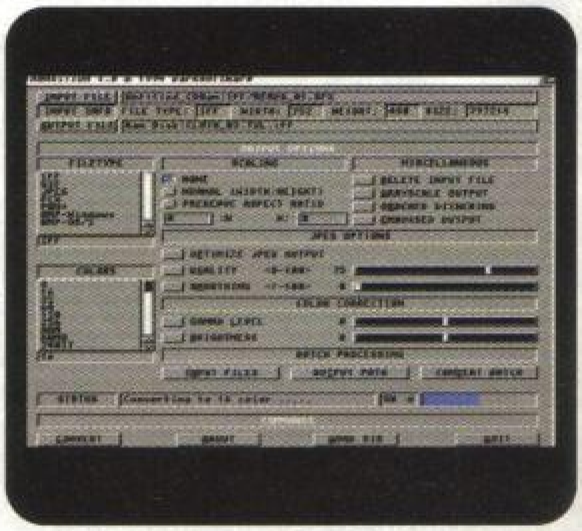
Don't get me wrong—I like the idea of having a "debabelizer" type of program for the Amiga. Unfortunately, the number of formats that Transition converts is limited and hardly surpasses most public-domain conversion programs. The only unusual format it handles is PBMPlus—a cross-platform format available on the Amiga in an extensive set of CLI commands. A look at the code in Transition's loaders and savers shows reference to utilities in the PBM suite, which confirmed the program's claim as a front-end for PBM-derived code.

In addition to PBM, Transition supports GIF, JPEG, PCX (ZSoft's PC Paintbrush program format), and BMP (both Windows and OS/2 versions). The fact that it supports so few formats is perplexing, especially as it neglects so many obvious ones. Assuming that the PBM-compatible source code for format conversions is available in the public domain, I question the logic for not including MacPaint, Targa, or PICT formats.

PUT TO THE TEST

I first tried Transition on Texture City's CD-ROM because I knew it contained several different formats. The only one Transition supported was PCX, and even that would not work. A quick look at the manual made it clear that Transition handles only 24-bit JPEG files; all other formats are limited to 256 colors.

When the program gets down to business, it uses two temporary files that require about 2MB, depending upon the process. The image is converted into a PBM file; then additional processing creates a second PBM file, and that is converted into the destination format. This is a time-consuming process; converting a JPEG 640x480 image to 16 colors took over five minutes on a 68030-based Amiga, with no option for viewing the image before it is automatically written directly to disk. By contrast, the same operation in Art Department Professional (which displayed the image and required saving it to disk manually) took less than a minute.



Transition's intuitive interface.

After each conversion process, or if an error occurs, all parameters are reset to their default values. If you forget to set the output file, or if you are trying brightness adjustments, you have to devote a goodly portion of time entering all the settings again. Furthermore, the height and width boxes display erroneous dimensions for JPEG images, the batch-processing option gives no indication of progress (though it seemed to work), and the program sporadically created corrupted files.

An Intuitionized front-end to the PBM utilities is a great idea, but this product barely takes advantage of its PBM capabilities. There's plenty of room for growth in nearly every area.

In the sparse but adequate nine-page manual, the developer states that more formats are planned for the future. I'd like to see support for more formats in the areas of loaders and savers. At this writing, it's clear Transition is no match for the heavyweights, such as AD Pro and Imagemaster. Given time and some fine-tuning, this low-cost alternative might show some promise in its next revision.

—Geoffrey Williams ■

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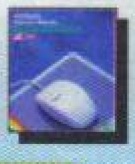

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The Game Preserve

By Peter Olafson, AW Games Editor

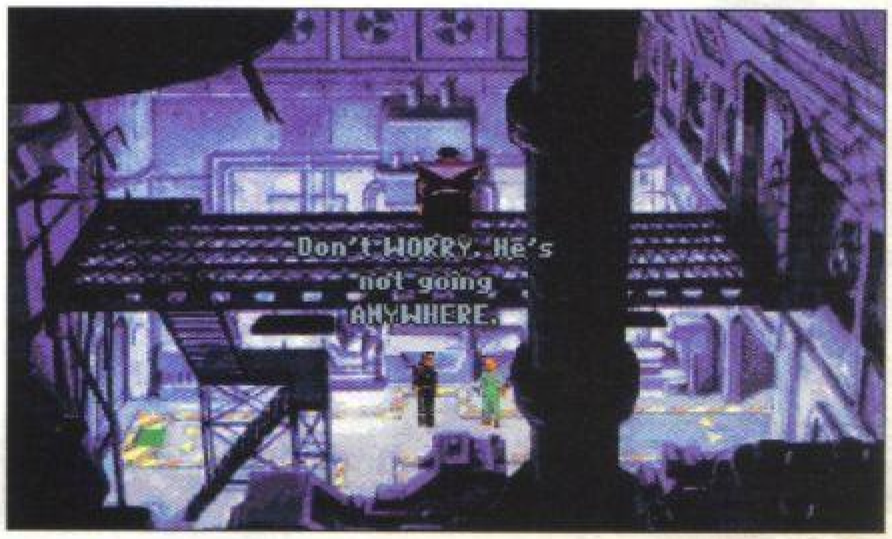
BENEATH A STEEL SKY

A
1.3 ✓
2.0 ✓
3.0 ✓
Hard-drive installable.
Off-disk copy-protection.

BENEATH A STEEL Sky (*Virgin UK*, about $40) is heavy. Physically heavy. This masterful graphics adventure from Revolution, coders of Lure of the Temptress and the Amiga version of King's Quest VI, weighs in at a record fifteen disks (three more than The Adventures of Willie Beamish), and is fully six times the size of Lure.

OK, so I sound like the back of an old Psygnosis manual. And, of course, size is meaningless if there's no substance. But Steel Sky, designed with comic-book author Dave Gibbons (The Watchman), is also heavy in atmosphere. The subject matter is distinctly dark (though it is handled with a charming light touch). You play an unassuming fellow named Robert Foster, who is kidnapped from his home in a wasteland called The Gap—whose residents adopted him as a child after the 'copter crash that killed his mother—by security forces from the city. On the way out, they decimate the desert community. Something very strange is going on here.

But again you prove lucky with 'copters. The security craft crashes while landing, and you're free. But you're in an unfamiliar place—a dead-end walkway atop the city's recycling plant, with one exit guarded, another leading to a platform high in the air and a third, inaccessible, appearing to lead to the furnace. Your robot companion, Joey, has been reduced to a circuit board by the attack on The Gap. And you're being sought by unpleasant men with guns for reasons you don't understand. At this point, you're not even sure who you are.



Robert Foster faces an oppressive futuristic world in "Sky."

But, as you will learn after completing the first sequence, you do have an ally somewhere.

That's a classical adventure-game structure, and it's handled ►

SHORT TAKES

LIONHEART

A
1.3 ✓
2.0 ✓
3.0 ✓
Hard-drive installable.
No copy-protection.

That's a better name than its creators may have known. When released in Europe a couple of years back, this German-born arcade adventure (*Thalion USA*, $39.95) represented the pinnacle of the form. In mid-1994, following its release here, it's still there. Lionheart indeed.

The game itself is more or less a traditional arcade adventure—"single white male with sword seeks long sideways walk; no smokers"—but the presentation is extraordinary. The three difficulty levels don't simply pump in different numbers of the same enemies, but reinvent the game in significant ways. The "secret" areas are agreeably difficult to find, often requiring leaps of faith (or foolhardiness). And the game has a wonderful leathery look: The foreground graphics are a glossy gray-green, which manages to suggest an ages-old accumulation of dead things, with parallax-scrolling clouds above, rising and falling (and refracting) water below, and purplish mountains to the rear. You'd swear it was AGA.

AMBERSTAR

B
1.3 ✓
2.0 –
3.0 ✓
Hard-drive installable.
Off-disk copy-protection.

Before Ambermoon (previewed in March), there was Amberstar (*Thalion USA*, $24.95). The notable difference between this German-built role-playing game (just recently released in the US) and the followup is that the sequel made extensive use of Legends of Valour-style free-scrolling. This one, which dates back a couple of years, uses the square-by-square shuffle that predated it.

Which is not to say Amberstar seems old. The strengths of the sequel are in many cases strengths of the original—among them shifting points-of-view, intelligent automapping, point-and-click conversations, intuitive inventory, nice graphics, and a pleasant mixture of tidiness and bigness to its dimensions.

At the same time, combat can be stupefyingly dull, the perspective sometimes disjointed—the characters you meet in the 3-D bits all seem child-size—and the game's a mite too fast on an '030-based machine to control easily. ►

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Circle 88 on Reader Service card.

under a classical adventure-game engine. Revolution has upgraded the "Virtual Theater" system used in Lure to superb effect. It is a model of intuition. (Hmmm, that sounds familiar.) If you want a description, you point at an object and click the left mouse button. To try to use it, point and click the right one. If you want to have a peek at something in your possession, you skate the mouse up to top of the screen and a graphic inventory appears. If you want to move to a new location, you have only to point at the exit and click. And so on and so forth. That neat, that simple. That elegant.

And if that interface sounds svelte, it's also perfectly matched to the graphics. This is quite simply the best-looking graphics adventure ever done on a standard Amiga. (Steel Sky runs on the A1200 as is, but AGA versions are planned.) It doesn't have Lure's hot and lurid glow, but then, this isn't a fantasy game. It's set in an ugly, oppressive futuristic world; the city's a place of dust browns and concrete grays—a 1984-ish city that looks as though it is wearing itself down with its own weight.

However, the game's never heavy-handed. The tone of the conversations (lots of them—with lots of options and responses that seem sensitive to what you've seen and done elsewhere in the game) is closer to, say, LucasArts' Indiana Jones & the Fate of Atlantis. You only live once (unless you save) so why not enjoy yourself while you're alive? Joey is as whiny a cyborg as has kicked up his treads since C3PO (though he'll get you out of many a tight spot). Your first exchange with security police—over a matter of an ID card allegedly dropped in porridge—sounds like something old Guybrush Threepwood would say. Can you imagine anything better?

MORE SHORT TAKES

Moreover, Amberstar seems to have problems with certain instructions used by '020-and-up processors—not to mention AmigaDOS 2.0, period—and it crashed whenever a torch was ignited. (It worked after I ran Degrader 1.3 with the "privilege" gadget enabled.)

Assassin: Special Edition

A–
1.3 ✓*
2.0 ✓*
3.0 ✓*
Not hard-drive installable.
Copy-protection.

Team 17 here continues its practice of updating earlier classics that started with the release of Alien Breed and Project-X. However, this remix of 1992's Assassin (about $20) is the first game that really needed to be reissued.

This superb Strider variant didn't do as well as the publisher hoped, largely (to my thinking) on account of the difficulty of the opening levels. This version reshuffles the deck a bit—it appears to start with you already inside the enemy base—while preserving your character's range of abilities and freedom of movement through the enormous play areas. Not to mention the impeccable graphics, which extend to routine gameplay (the way darkness is conveyed) as much as special effects (the little puffs of smoke when the character squeals to a halt). A well-chosen update, and you can't beat the price.

Wonderdog

D
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

Here's a would-be console-beater that preserves the mechanics but neglects the fun. Wonderdog (*Core Design*, about $35)—featuring a cute little hound who glides with his ears—zips along through many a platformed, lollipop sub-level at super-Sonic speeds, with lots of bonus sections and not-unpleasant backdrops. You know the routine.

But for its challenges, the game relies far too heavily on distribution and number of enemies—who can be sent into the usual platform-game cannonball dive by simply zapping them with stars—and not nearly enough on level design. It's ordinary, and in this very competitive field, that's the kiss of death.

Cyberpunks

D+
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

Sigh: Another well-meaning but incomplete design from *Core*. (They seemed to have a lot of these over the winter.) Pity, too, as Cyberpunks (about $35) is otherwise a well-put-together angled-down maze game.

You're running a sort of sci-fi baby patrol: Three gap-toothed gunsels roam largeish levels, teleporting into inaccessible areas, logging into computers, and collecting key cards that lead to other keycards that lead to still more keycards.

The trouble is that the game is ultimately far too simple and not sufficiently interactive; it's more like a multidirectional arcade-adventure in camouflage. Items you collect automatically by passing over them are also used automatically in the appropriate spots, and when you don't have the right keycard, you're told which one you need. The three little fellows are welded together—they walk only in single file—and don't have any special abilities as individuals, a là The Lost Vikings. The only real challenge here is inventory management. T'ain't enough.

Bart vs. the World

D
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

Krusty's Fun House

B
1.3 ✓
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

D'oh! I love The Simpsons like family, but don't much like what's been done to them on the Amiga, and the two most recent offerings (each from *Virgin UK* and about $35) don't change my mind much. These conversions of Acclaim arcade games don't even begin to do justice to the potential of Matt Groening's mustard-colored, four-fingered family.

If you've seen the Fox TV show, you know "The Simpsons" thrives on a combustible chemistry of the domestic and the twisted. But if you played Bart Versus the World knowing nothing about the Simps, you'd think it was a not-too-good Saturday-morning cartoon.

It's a good conversion of a mediocre game. Yes, it's pleasantly lighthearted, and, yes, the settings and challenges are varied—here Bart's scaling the sails of a Chinese junk, here he's skateboarding along the Great Wall—and, no, I can't complain about the barely-above-C64 graphics. (A Simpsons game that's a graphical tour-de-force wouldn't make sense.) But there's little clue as to what makes the show special (apart from the ending, if you lose); the box art has more character than this game. They didn't even get Krusty the Clown's hair color right. Quoth the Bart: Eat my shorts.

Well, on second thought, Acclaim/Virgin, just eat the waistband of the shorts. For while Krusty isn't much better than BvtW on the character issue, it is a polished, clever, and creative platformer/puzzler—a sort of Lemmings-in-reverse—that would be enjoyable (albeit a bit strange) if the Simpsons had never existed. ►

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Circle 71 on Reader Service card.

The amoral TV clown is trying to coax the rats infesting his 60-level fun house into traps. However, the rodents are an uncomplicated lot—they can't climb more than one block—and are liable to fall victim to the fun house's built-in pitfalls before they find Krusty's, and so the clown has to steer them down the crooked path to doom using objects found around the maze. It all falls together nicely, and the manual's a scream as well. Go for it, man!

DINOSAUR DETECTIVE AGENCY

D
1.3 ✓✱
2.0 ✓✱
3.0 ✓✱
Not hard-drive installable.
Copy-protection.

There's no really persuasive reason for this banal arcade game (*Alternative*, about $35) to exist. That is, there's no reason for it to involve dinosaurs, save for the popularity of a little item called Jurassic Park. And there's no reason for it to involve a detective agency, save someone's need to call the lead character Sherloch Ness.

Nothing is explosively wrong with the game itself—and I suppose it's nice that the dino wields a camera in lieu of club—but there's also nothing particularly right with it: ugly enemies, routine scenery, a heretofore-unknown Jurassic talent for vertical tunneling, and a mundane name. Whether or not there's anything prehistoric in Loch Ness, I could wish there was one more.

SUBURBAN COMMANDO

C–
1.3 ✓✱
2.0 ✓
3.0 ✓
Not hard-drive installable.
Copy-protection.

Variety means never having to make up your mind. This amalgam of arcade styles (*Alternative*, about $35), based on a three-year-old Hulk Hogan movie, tries to be many things to many people and doesn't handle any of them sufficiently well to nail the pin. The horizontal shoot-'em-up level, three platform levels (the cleverest parts of the game), and three Streetfighter-ish "boss" levels are original but haunted by the spectre of banality.

SPECIAL REPORT:
FREELY DISTRIBUTABLE AGA GAMES

Until recently, you could count the AGA public-domain and shareware games on one hand, and still have a couple of fingers left over. These days, you'd need to throw in another hand, and perhaps a couple of toes. Most of the games are still plowing well-trodden territory—this little town ain't big enough for two AGA chess and two AGA Tetris games—but signs are emerging that there's more out there than just the standard cover-versions of proven hits.

AmiBoard
(Internet)

Don't be fooled. This 3.0-only chess game displays only eight colors, but it plays an exceptionally solid game—if not quite at UChess level—and is highly configurable. The pieces are loaded from an IFF brush, so you can create your own, and its support for PGN (Portable Game Notation) files allows use of thousands of chess games available by anonymous FTP.

BombPac32
(Internet and CIS)

Well, look who's here. BombPac is from one Oliver Wagner, who's best known for his quintet of Qix clones (the Bally series) and Escape from Jovi from the late '80s. This puzzle game—the sort that was all the rage three years ago on the IBM—arms the yellow dot-eater with wall-destroying bombs and sets him down in search of keys in some wicked mazes. One of the best of its kind.

Hoi
(Internet and CIS)

The original version of this platformer was a commercial game planned for release by Innerprise and finally issued by Hollyware—but the AGA version has somehow wound up as PD. It's not a full treatment—only the gradient backdrop is AGA—but it's still a tough little number, and Hoi (a little dinosaur) is cute as the dickens.

And while we're on the subject of commercial games released in freely distributable form, you'll be interested to learn that UChess author Roger Uzun's International Championship Wrestling—remember Avatar Consulting?—has turned up on the Internet. (Can Heart of the Dragon be far behind?)

Klondike Deluxe
(Widely available)

Yup, it's the solitaire game and, at three disks, the largest ►

To locate vendors of the games reviewed, see the "Manufacturers'/Distributors' Addresses" list on p. 74.

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AGA game to date. The AGA part is evident mainly in the high-res girlie drawings—1940's pinup style, PG-rated—featured on the backs of the playing cards. Nicely done, with lots of other card graphics available—from Cindy Crawford to Star Trek—and the game's all right. (At press time, Klondike II was just released.)

MegaBall 3.0
(Widely available)

Ed Mackey's wonderful Breakout game—a constant presence in the shareware field since its introduction as Ball a few years back—finally meets up with the AGA chip set. It's the old ball & paddle, sure, and I do wish the explosion of the bat was properly animated, but it's the best-looking ball & paddle since Arkanoid first hit the bricks, and if you register, you'll get a board editor and the ability to play the hundreds of user-created boards that have already been uploaded to BBSs around the world.

New World
(Widely available)

The most complex and least conventional of this bunch, and also, alas, the most problematic. The good news is that we finally have an Amiga version of Seven Cities of Gold that doesn't require Kickstart 1.1, and with nice Amiga amenities and an AGA-specific executable (along with one for 2.0 ECS machines) to boot. It's the classic game of exploration and exploitation. The trouble is getting it to run. Unfortunately, NW wasn't fully tested before release (the author only has an A3000), and versions through 1.31 have significant problems—namely, lockups and the inability to recognize game maps. However, author Kevin Roll has made a good-faith effort to squash the bugs, and I was able to wrap up this review with one quick fix that appeared to work perfectly. Get yourself some playtesters, Kevin, and keep at it. You're onto something good here.

Solitaire
(Portal)

No cute little pics adorn this relatively obscure and sedate AGA version of Canfield—the default-card set displays the CBM logo—but that leaves you free to focus on the game. And despite the absence of some basic features, that game (evidently based on a Windows version) is quite well done, with a creamy display that's ample reply to the VGA solitaire games so common on the IBM.

Tetris Duel AGA
(Internet and CIS)

Please. Not another falling-blocks game. Almost everything you need to know about this one is in the title: It's Tetris, it has a two-player mode (and some cute tricks therein), and it has 256 colors. Thank you. Don't call us.

Updates: The first AGA PD game, **UChess**, is still being relentlessly upgraded and is now up to version 2.83. It continues to decimate the commercial competition, and it now complements the "large" version (which requires at least 10 megs of fast RAM) with a "tiny" one for machines with two to four megs.

Planned: An AGA version of the killer artillery duel **Scorched Tanks** (now up to 1.77 in shareware, 1.8 registered) is being contemplated. Author Mike Welch is waiting for the AGA version of AMOS Professional. (He's currently working on a version of the Atari classic, Joust.) ■

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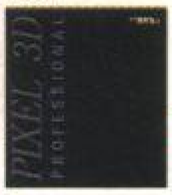

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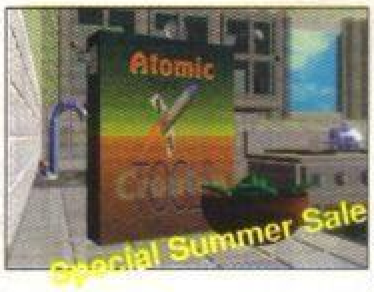

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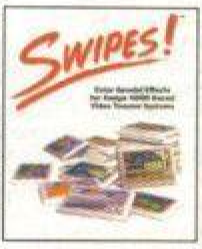

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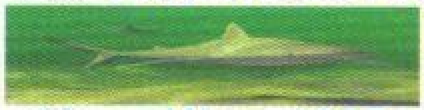

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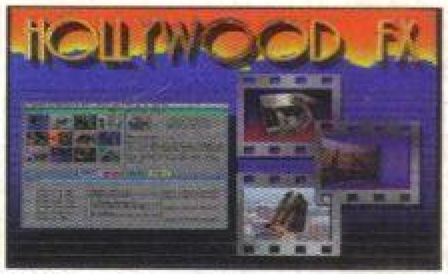

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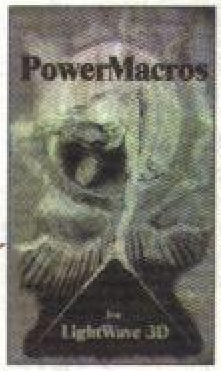

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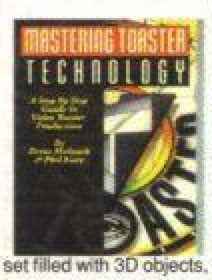

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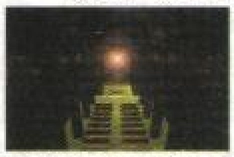

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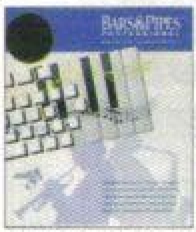

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NEWEST DISKS

VO11: Toaster Textures reflection maps, bump maps, surfaces and scenes for LightWave.
VO10: MainActor - Animation processor. Reads/writes/converts many animation/picture formats and supports many graphics boards...very nice!
WB145: Big Dummies Guide to the Internet An interactive AmigaGuide to the information highway and how to tap it!
WB144: Molecule CPK renders space filling representations of atoms and molecules. Req's WB3.0+ & Hard drive.
WB143: ViewTek THE definitive display utility. Versions included for Amiga, DCTV, EGS, FC24, Picasso, Opalvision, Retina, IV24. Also includes new MakeAnim7 utility.
WB142: JCGraph A beautiful graphic package...pie charts, 3D charts of all types...exports EPS, IFF & Draw2000 formats!
WB140: Mr. Backup A powerful hard-drive backup utility with full tape-drive support. Formally commercial! Req. WB2+
FD98ABC: Klondike AGA - Solitaire a'la outstanding hi-res AGA graphics! Runs in multiscan or any PAL screenmode.
FD97: Bonanza - Battlesheep–a battleship game. Tanx'n'Stuf-seek and destroy in a cool 4-way scrolling world, MileStones–play Mille Bournes against the Amiga and Galactoid–a galaxian type game.
FD96: Tetris Duel AGA - The next generation Tetris. 2 players can play head to head and sabotage each other! Great graphics for AGA machines! Req's A1200 or A4000.
FD95: Deluxe Galaga - You should be paying $40 bucks for this one! Easily one of the best p/d games ever! All kinds of power-ups and silky smooth motion. Req's 1MB Chip RAM (Fat Agnus) for PAL Mode.
FD94: Scorched Tanks - completely updated and compatible with AGA/3.0! 60 different ways to blow each other away! An outstanding game of angles, trajectories & unique arsenals!
FD93: MegaBall AGA - This is the one you've been waiting for! Updated to knock your socks off! THE best p/d game for the Amiga. Req.'s WB2+ & 1MB RAM. Show off that AGA!
FD92: Blast'em - contains Scorched Tanks–a tank battle with futuristic weapons/defenses & "great" graphics. Galactoid is a Galaxian/Space Invaders game completely Amiga-ized.
DD93: Magic User Interface Greatly speeds development. Auto Screen/Window/Font sensitive interfaces and much more!
DD92: Developer Contains the official Commodore developers kits for the AmigaGuide and Commodore Install Utilities...a must have for all serious developers.

FUN DISKS

FD7: Pacman - This disk contains several pacman type games including: PacMan87, MazeMan and Zonix.
FD11: Las Vegas and Card Games - Las Vegas Craps - The best Las Vegas Craps simulation every written for any computer. Contains extensive HELP features. Also Thirty-One,VideoPoker and more.
FD12AB: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

DD83: IBM - Not one, but *TWO* IBM emulators that will allow the running of MS-DOS software with Amiga programs!!! Comes complete with programs to turn your Amiga floppy drives into 720K IBM compatible drives. Also, check out our PC-Task emulator on our DevWare Video page!

FD13: Board Games - contains Monopoly, Dominoes, Paranoids, and others.
FD17: Educational Games - This disk includes several games for youngsters including geography, math, science, and word games, also includes Wheel of Fortune.
FD20: Tactical Games - MechForce; A game that simulates combat between two or more giant robots. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.
FD33: Arcade Games - Ffreddy a Mario Brothers type of game, Gerbils a target practice game, PipeLine a German interpretation of Pipe Dreams, Tron a light cycles version, and Wetroids a wonderful version of asteroids with a hilarious twist.
FD38: Games - Cribbage Master - A great cribbage game and tutor, Spades - a well done card game, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

WB105AB: Workbench 2+ Extras #2

This set contains the programs that should have been included with WB2+. These powerful utilities take full advantage of the many new capabilites that are available in Workbench 2+. Includes: Tool Manager - a wonderful utility to add programs to your TOOL menu. Virus Protection - Degrader, Icon - Enhances Workbench's "Show All" to display over 40 distinct icons for different types of files. Bitmap Font Editor, Screen Blankers - ala fractals and spliners and swarming bees! Requester Enhancers and CPUBlit. Two disk set, counts as two.

FD39A&B: Star Trek, The New Generation - This is a completely different version of Star Trek than that found on FD12. This one was created by the German author Tobias. Excellent!!! Counts as two disks. Requires 512k
FD50: Submarine Game - Sealance, one and a half years in the making, this is an outstanding submarine tactical game. Commercial quality, highly recommended.

THE AMIGAWORLD "BEST-OF" SET

FD85ABCD: AmigaWorld's Best - These four disks contain the *hottest* p/d games! Includes Mother Lode, Moria, Minefield, Pong, Intruder Alert, Deluxe PacMan, Rocky and Super Artillery (see Dec. '92 AmigaWorld). Four disk set, counts as three.

FD57: Arcade Games - Includes 2 truly commercial quality games. MegaBall, an Arkanoid-ish game, features 5 musical scores and addicting gameplay. Gravity Attack is a psychadelic trip through several different worlds—each different.
FD59: Game Potpourri - Xenon III is an almost exact clone of the commercial game of the same name...a great shootemup. Crossword will take lists of words & automatically generate word-search puzzles for any Epson compatible printer.
FD60: Games - In Nebula, race over a 3d world to destroy enemy installations. Interferon; a *great* Dr. Mario clone. Enigma; is it a game or puzzle?
FD61: Games - Solitaire; great graphics, plays two versions. Kide; an interesting piece of eye candy. Extreme Violence; 2 player kill or be killed game. YATC; A Tetris clone with Artifical Intelligence. Genesis; create realistic 3d fractal worlds.
FD62: PomPom Gunner. An extremely smooth and well done World War II gunner simulation. Req. 1 megabyte of memory.
FD67: Arcade - Includes Llamatron a well-done 'Robotron' clone. Hate is a "terrific" Zaxxon clone with multiple levels/worlds and smooth diagonal scrolling...a 10!
FD69: MindGames - Had enough of shoot-em up games? Relax and let these 21 games exercise your mind instead of your wrist.
FD73: Arcade Series - Intruder Alert! is a MULTI-level "Berserk" clone. Features smooth gameplay, great graphics & digitized sound f/x.
FD74: Arcade Series - RingWar is an "Outer Limits" clone with vectorized graphics. MotherLode is a "Lode Runner" clone with 50 levels! In BlitzTanks, they're coming at you from all directions!! Call in air strikes and use your heavy artillery to survive!
FD75: Arcade Series - Descender is a clone of the classic arcade game "Tempest"; complete with vectorized graphics. Tanx is the classic battle of trajectories and inertia between two tanks—incredibly well done! Search is a maze game unlike any other—included is a level editor too. (Tanx requires 1 meg chip memory–Fat Agnus)
FD77: Arcade Series - Galaga'92 is a clone of the arcade game with several gameplay enhancements--with smoooth, sharp graphics, it's better than the original! Pharaohs Curse is a clone of the original C64 classic. Diplomacy is a beautifully computerized version of the Avalon Hill board game--conquer or be conquered!
FD81: SuperGames - Some of *the best games*--Donkey Kong is better than the original *with an extra level!* Frantic Freddie and TrailBlazer are both fast-paced arcade games. Mad Bomber is the classic game of "Kaboom" redone with an Amiga flare. All of these games are excellent!
FD82: Intrepid - In the Arctic ice, you control a tank on a mission to rescue hostages in this superbly crafted Amiga original.
FD84: Games! Deluxe PacMan is better than the original--20+ mazes, special "power-ups" with *oustanding* graphics. ThinkAmania is the classic game of concentration--with *beautifully* drawn HiRes images.
FD86: UChess: The strongest playing Chess program available for the Amiga period. Req. 68030+, Workbench2+, 4MB RAM or more. Supports AGA (req. 8MB!)
FD87: OXYD- A commercial quality game--similar to Marble Madness in nany ways, but allows two computers to link & play together...see how many of the 200 landscapes you can complete without having to get the hint book!
FD88: AmyBoulderdash - a clone of the original classic... extremely well done complete with level editor. 2 complete sets of levels and a level editor. Requires Workbench 2+.
FD89: Kastle Kumquat - A thoroughly entertaining and challenging maze/adventure game. Great soundtrack and graphics. Req's 1MB Chip RAM (for PAL mode).
FD90: Conquest & Dominion - Conquer the known world and maintain dominion over it--a microcosm of economic survival.
FD91: Popeye - A clone of the original C-64 classic--Amiga style with enhanced graphics. Req 1MB chip RAM for PAL.

WORKBENCH DISKS

WB4:Telecommunication - This disk contains several excellent pd communication programs: Access 1.42, Comm 1.34 & Handshake 2.12a. See also WB102 & WB115.
WB5: Fonts #1- 35 bitmap fonts. Also included are five PageStream fonts,and ShowFont - a font display program.
WB6: Fonts #2 - ShowFont allows you to quickly and painlessly view all 256 characters in a typical font. Includes large AmigaDos system fonts (many up to 56pts).
WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.
WB9: Icons - Truly a multitude of various types and kinds. Also includes IconMiester, IconLab, and others great utilities to help generate icons.
WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A must have!
WB13AB: Printer Drivers and Generator - over 70 different drivers (including HP LaserJet 3 & 4!), also includes a printer-driver generator. Two disk set counts as two.
WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).
WB18: Word/Text Processors - This disk contains the best editors. Includes,TextPlus (v2.2e) a full featured word processor, Dme(v1.35) a great programmers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.
WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with Dpaint and WYSIWYG word processors.
WB23: Graphics and Plotting - Plot, a 3-D mathematical function plotter. Can plot any user defined function, BezSurf2 - produce awesome pictures of objects one could turn on a lathe. Can also map IFF image files onto any surface that it can draw. Now compatible with most 3D packages, and VScreen - makes a virtual screen anywhere.
WB25:Educational - On this disk are two programs that can generate maps of differing types. World Data Base uses the CIA's data base to generate detailed maps of any entered user global coordinates. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.
WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

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QT3: THE A64 PACKAGE *VERSION 3* - A very complete Commodore 64 emulator. Supports any CPU and is fully compatible with WB1.3 & 2.0 and now 3.0! This version includes a special adaptor that will allow you to connect your 64's 1541 disk drive to your paralel port of your Amiga for total emulation. All-new transfer software! Special price $59.95 -with hardware.

WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD CAD program, now comes with predrawn common circuit components for insertion into schematics.
WB35: 3D Graphics - This disk contains 3Fonts - Full vector font set for use with 3d programs, FontMaker - make 3d fonts from any system font, Make3DShape - create 3d shapes from any image, DumptoIFF - create 3d animations preserves pallet, World3d - a demo of a front end for use with DKBRender.
WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models with this one.
WB37: Educational - Educational games and puzzles that cover math, geography, spelling, and books. Ages 6 - 16
WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program. Version 3.20--compatible with WB2+.
WB43: Business - This disk contains AnalytiCalc - probably the most powerful spreadsheet program on the Amiga. A full featured spreadsheet with many features expected in a commercial package. Req. 1.2 MB
WB46: Clip Art - HighRes clip art with the following motifs - embellishments (borders, dodads ....), people, & transportation.
WB47: Clip Art - Hires clip art. Motifs - hair, drafting, summer, animals and macfood.
WB48: Clip Art - Hires clip art. Motifs - Holidays, music, medical, and misc.
WB53: Graphics - Raytracing programs generate absolutely stunning realistic looking planes, rockets, buildings.... and surreal images. C-Light is the most powerful EASY-TO-USE of it's kind we have seen to date. This is easily better, and more full featured, than similar commercial programs costing in the hundreds of dollars. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more.
WB54: Printing - This disk contains several routines to help with the chore of printing. Includes Gothic - Finally a Banner printer for the PD! PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features. Lila - with ease, print ASCII files to a PostScript printer, and more.
WB55: Application - XCopyIII - a full featured disk copier, make backups of copy protected disks. RoadRoute - find the quickest route from one city to another, highway description included. Diary - a diary program like "Dougy Houser M.D", Cal - a calendar program, Magman - a database tailored for articles and publications.
WB57: Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenomorph.
WB62: Midi Utilities - Several useful midi utilities including, programs to transfer to and from several music programs to midi, a midi sysex handler, a midi recorder with timebase, display midi info, file sequence player, and a few scores.
WB63: Disk Utilities #3 - Several highly recommended programs to aid in removing duplicate files from your hard drive, performing file backups, Binary editing, fast formatting, file recovery, and forced disk validation of corrupt disks.
WB66: Icons #2 Lot's of neat icons. Also, several wonderful programs that to let you create your own icons, modify and manipulate icons and info structures.
WB69: Music - 90 minutes of classical and modern electronic music for you Amiga.-
WB75: Music - over 100 instruments files (.inst) and sample sound files (.ss)
WB79: Home & Business Accounting - Includes Ckbacct - the most complete checkbook accounting program going, LCDCalc - this well done calculator has a very large display and operates from the keyboard or mouse, Mileage master - monitor your automobile mileage with this mileage log, Grammar - a grammar checker, and Worldtime - find out what time it is in up to 50 global cities.

WB119ABCDE: Font Set This collection contains over 100 typefaces for use with Professional Page/PageSetter 3+ or PageStream 2.1+. These fonts will output to any laser printer or dot-matrix printer with no jaggies, thanks to outline fonts. Very pro-looking. 5 disk set counts as 4.

WB81: Great Applications - DataEasy a very easy to use, database program. Don't let the ease of use fool you, this is a very full featured database program including full printer control for address labels and mail merge applications. Also includes, TypeTut a good typing tutor, RLC a full featured label printer, Banner, a multi-font banner maker, and Budget a home accounting in a program. Highly recommended.
WB82: Animations - Four full length, well done "movie" style animations. Including, Coyote, JugglerII, GhostPool, & Mechanix. 2 disks, counts as 1.
WB93: Workbench 1.3 Extras #2 Contains the utilities that Commodore should have shipped with the Amiga; VirusX4.0, Snap, FixDisk (recover corrupt/deleted files), Disk Optimizer (floppy & hard), MachIII (screen blanker, hotkey, mouse accel., macro, clock utility), GOMF (a gurubuster)and PrintStudio.
WB95: Checkbook Accountant 2.1 - Definitely commercial grade; we've seen many checkbook programs and this is the best. Full budgeting, transaction recording & report generation.
WB96: Dupers - Contains XcopyIII & Nib which will backup copy-protected programs. FreeCopy removes copy protection from several programs, and SuperDuper will crank-out fast AmigaDOS copies.
WB102: Telecommunications - Contains the programs NComm 2.0 and VT100-29B. Zmodem protocols, XPR protocol support, full VT100 emulation. NComm's script language is so powerful it can create a full-featured BBS system.
WB106: Home Manager - This is a great all-in-one address book with an autodialer/notepad/to-do list/appointment scheduler/home inventory database and phone number dialer.
WB108: OctaMED - This breakthrough program doubles your Amiga's sound capabilities from 4 channels to an ear-popping 8 channels! All the renound editing capabilities of MED plus 4 more channels! If you thought your Amiga sounded good before...you aint heard nuthin' yet!
WB109: VerseWise - Display, search and print The New Testament.
WB113: Sid II - Why pay 40 bucks for a directory utility, when this one will do it all plus much more! A truly professional-caliber program. Sid 1 was our best, now *completely* rewritten, Sid 2 will astound you.
WB114: Fonts #4 - Contains 36 bitmap system fonts.
WB115: Telecommunication - If you have AmigaDOS 2.04+ and a modem, then this is *THE* program for you. Term *totally* conforms to the User Interface Style Guide for 2.04, has an ARexx port, and supports all popular file-transfer protocols through XPR libraries. We wish all programs were this good.
WB116: Databases - This is what you've been waiting for! Contains 5 uniquely specialized database programs for tracking: Videotapes, CD's, Magazine Articles, Comic Books and Trading Cards!
WB120: Grinder - a complete graphics conversion package that supports GIF's, JPeg, Neochrome, Degas, PCX, Targa, TIFF, HAM-E and IFF format pictures. An invaluable tool for all desktop-videographers and desktop publishers.

WB118: Amiga Beginner - *You asked for it!* A complete tutorial for the beginner on using the Amiga. Starts you off at the power-switch and takes you through to the CLI/Shell and all points in between. *Bonus!* Also included are 16-color icons to replace every icon in your 2.0+ Workbench.

WB121: ProPage3/4 Enhancer - This disk contains over 40 "Genies" for use with ProPage 3+, including useful ones like Make Pie Chart and Resize Text to fit Box to name a few. Also includes structured & bitmap clipart for unique borders...a *must have* for all PPage 3 users.
WB122: System Optimizer - KCommodity enhances your system, gives memory meters, mouse/keyboard enhancements, online timers plus *many* others...too numerous to list! REorg will optimize hard and floppy-disks for a big speed increase. HDMem will allow you to use up to 2 megs of hard-drive space for virtual memory! (Req. 68020+ w/MMU) All programs require 2.0+.
WB123AB: Flags of the World - same as WB124, but for Workbench 1.3. Req. 1MB. 2 disk set, counts as two.
WB124: Flags of the World - Two modes: click and learn or a game to test your knowledge. Great graphics--fantastic learning tool. Has current Russia & Yugoslavia republics. Req. Workbench 2.0+ & 1MB RAM.
WB127: Blankers - Over 20 different screen blankers. Most run on Workbench 1.3+...a few require 2.0+
WB128: ColorFonts - contains 12 color bitmap fonts for use with DPaint or any software that supports ColorFonts.
WB129: Super Virus Killer - From Safe Hex Int'l, who catalogs and kills Amiga Viruses *worldwide*--a complete virus system that knows all Amiga viruses...updated often. Req. WB 2+
WB130: ToolManger 2 - The ultimate tool manager for your Workbench. Add animated icons, sound effects and 'docks' of programs to your WB...very useful! Req. 2.0+ and hard drive.
WB131: Magic Workbench - Make your 2.04+ Workbench sizzle with style with these 8-color dithered icons. Easy auto-installs in minutes. Req.'s WB2.04+ and hard drive.
WB132: Canon Studio Version 2 - Special printer Preferences editor and drivers for BJC 600, 800 & 880, LBP, A1, A2, BJC 800, BJ 5, 10, 20, 200, 230, 300, 130.
WB133: Panasonic Studio - Special printer Preferences editor and driver system for all Panasonic 9 & 24-pin printers.
WB134: 3.0/AGA Blanker - BlitzBlanker for WB3.0+. 14 different blankers to really show off your AGA machine!
WB135: 3.0 Extras #1 - 13+ utilities for WB 3.0. Several must-haves for getting the most out of your new graphics modes!
WB137: The ARexx Guide - Full AmigaGuide (inc.) document to teach you ARexx!!! Tip-filled with easy x-referencing!
WB136: 3.0 Extras #2 - Another disk chocked full of utilities to unleash the power of Workbench 3.0 and AGA!!
WB139: MIDI Performence Manager Utility to manage a MIDI synthesizer and other MIDI equipment. Requires WB 2+.

DEV DISKS

DD54: Compression - The best file compression programs and aids for the Amiga. Includes Arc, Lharc, Lhwarp, Pkax, PowerPacker a must have by all, Zip, Warp, and Zoo.
DD71AB: C Compiler - This disk contains DICE, Matthew Dillon's full featured, powerful C compiler & environment. 2 disks, counts as 2.
DD79abcd: Amiga "C" Tutorial - This is the most comprehensive C language--*Amiga oriented*--set of tutorials available. Includes full working examples, source code and an incredible set of lessons. Included are full discussions and examples for Amiga programming. 4 disk set, counts as 3.
DD86: The Programmer - Includes GadTools and REQTools which will allow you to create your user interfaces and then the program will automatically generate "C" source code or Assembly-code. Requires, and writes code for, AmigaDOS2+.
DD89: UEdit - Probably *the* most powerful text editor for the Amiga. Previously commercial, now public domain. 1 MB.
DD91: ParBench - Allows you to easily connect/network two Amigas/CDTVs together and share storage devices. Req's custom cable (docs to make cable included--easy).
DD90: Advanced Utilities - CompressDisk doubles the capacity of your hard-drive on the fly with compression!!! Also contains: disk optimizer, SCSI mount utility, Keymap editors, Enforcer, Undeleter & more. Most programs require 2.0+.

VIDEO DISKS

VO6: Modeling Objects Contains 20 vector objects in Imagine format. These are perfect for use with Imagine or other compatible product. Includes Amiga 3000, space station and many more!
VO7: StarTrek Objects - Contains the USS Reliant, NCC-1701-D (om the Next Generation), a Ferengi Marauder ship. As an added bonus, contains a fully detailed Porsche 911 and Apache Attack helicopter--all in Imagine format.
VO9: Imaging - Included on this disk are the indispensible utilities, Rend24, ViewTek and the JPEG utilities. Rend24 is invaluable for 24-bit animators allowing for previews on AGA and non-AGA Amigas. ViewTek plays back anims of all sorts including Anim 5, 7 and 8 formats.

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What's New with Anti Gravity Workshop
AGW is currently working on a Virtual Reality pilot for Fox. Look for it this Fall on Fox!

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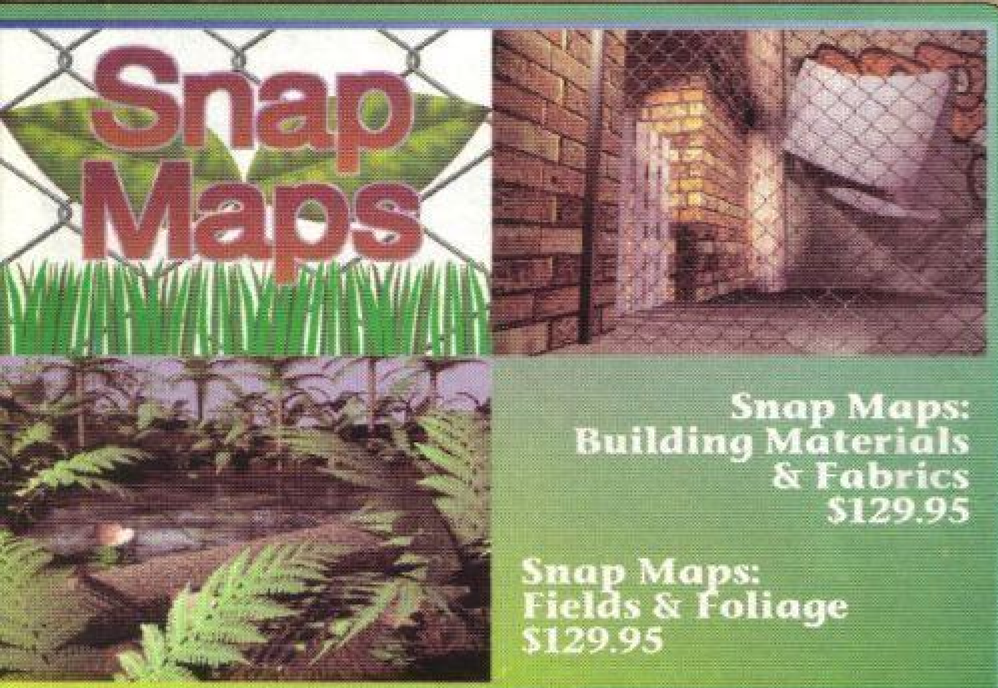

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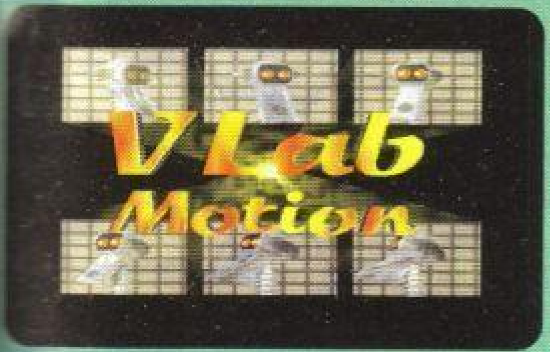

Bring th[illegible] versatility of true on-line video and audio non-linear recording, editing, and playback to your Amiga!

The VLab Motion System is built around a Zorro II card that utilizes a compression & decompression JPEG chipset and other specialized chips to provide real time digital video capture and playback at YUV 4:2:2 square pixel quality, real-time effects like chroma keying, genlocking, picture-in-picture, and video scaling.

The VLab Motion is also perfect for computer animation playback.

Complete ARexx support allows digital video effects to be applied to your video frames with third party image processors like ADPro™ and Image FX™.

VLab Motion includes composite and Y/C in and out with an expansion socket for digital YUV or RGB component transcoders.

Add the VLab Motion System to your video or graphics studio & *You Will Fly Above The Rest.*

VLab Motion JPEG Capture Board:

- Direct to disk recording and playback
- Integrated genlock and chroma-key
- Digital video capture in real-time at 60 fields or 30 frames per sec for NTSC
- Zorro II motion JPEG non-linear video edit/playback Component and Y/C (S-VHS and Hi8 format) inputand output
- Real time JPEG compression and decompression
- Integrated scaling hardware giving extended capture and replay capability with picture-in-picture feature
- Broadcast quality output plus all the features of the VLab digitizers, w/real-time compression
- Fully integrated with the "Toccata" audio digitizing card, giving simultaneous, synchronized, direct to disk CD quality audio recording
- 50 pin feature connector for digital YUV/RGB
- Digitizer plus video output with YUV 4:2:2 square pixel quality, hardware scaling, genlock, picture in picture and chroma key for real-time blue-box effect.
- NewTek Video Toaster compatible interface
- No separate TBC required

MovieShop! Video Editing Software Included with VLab Motion

- MovieShop is the non-linear edit software written especially for VLab Motion System.
- Video clips and audio stored in draws like Amiga Workbench but within JPEG File System partitions usually in 500MB to 2GB range.
- Cuts or sequences can be played back any time, making edits of the rough or fine cut visible at a glance.
- Runs directly on the VLab Motion board, minimizing CPU access time, allows rec/play on the same screen.

VLab Y/C Video Digitizer:	$435
External:	$495
VLab Motion JPEG Board:	$1635
VLab Motion System: VLabMotion +Toccata	$2100
VLab Motion Complete System: VLabMotion +Toccata + Retina Z3 4MB	$2680

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Toccata
16 BIT AUDIO
Card/Sampler

*Toccata's non-linear audio editing is a quantum leap in speed and compatibility! Toccata also includes "**Samplitude**", the powerful sampling software created by SIK'D of Dresden, Germany.*

Toccata 16-Bit Audio Card/Sampler $ 465

Hardware Features:

- 16 bit stereo, 48 KHz sampling direct to hard disk
- Up to 32 channel parallel playback from hard disk
- 3 stereo inputs, 1 stereo mic. input, 1 stereo output
- Reads SMPTE time code
- Compatible with the A2000/3000/4000
- Hard disk recording from any source
- Simultaneous recording and playback
- On board mixer for mixing any input w/recorded data
- 95 dB dynamic range, 10 KHz–20 KHz frequency range
- Compatible: VCR, DAT recorder, CD player, Amplifier, etc.
- Compression, with a data reduction factor of 2 to 4
- Playback from floppy disk
- Perfect interfacing with the V-Lab Video Digitizer

Samplitude Software Features:

- Device direct mode for direct sector access on hard disk
- Extensive play libraries
- Fast cut functions w/zero cross routines
- Parameters window for setting sample thickness in Hz
- A full range of tools: TRecorder, TControl, & TJinglePlayer
- Supports MAUD, 8 Bit IFF, and AIFF

Retina Z-III 32 bit Display Adaptor

A quantum leap in speed and compatibility!

The Retina Z3 is a pure Zorro III card, provides a data transfer rate 4 to 5 times higher than the Retina Z2.

Features:

- Programmable upto 2400x1200 (1152x862 in 24 bit)
- 800x600 24bit display in interlaced or non-laced
- 32 bit bus to video memory runs at 60 MHz
- 15–80 KHz Horizontal and 50–110 Hz Vertical freq.
- Includes XiPaint real time paint program
- Seamlessly compatible with the V-Lab Video Digitizer
- Compatible with the Video Toaster and Opalvision
- Optional external encoder w/composite & SVHS out
- MakeRACE allows animations in 8, 16, or 24 bit
- Display 24bit animations on a 24bit workbench screen
- Retina EMU workbench and custom display emulation
- Drawing assist functions which accelerate GUI operations
- Compatible with all versions of the Buster chip

RETINA Z2	2 MB	$ 34
	4 MB	$ 49
RETINA Z3	1 MB	$ 56
	4 MB	$ 69

ssence, Volume I $95

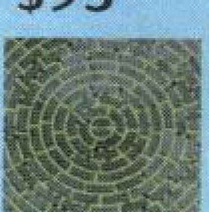
n "algorithmic texture" is a surface that can be haracterized with a mathe matical algorithm as pposed to just "painting on" with a brushmap. amples are checkerboards, grids, camouflage and ood. These textures are not brushmaps or pictures. hey are algorithms used to color the rface of an object, and take very little RAM (about 1–15K each), and have o pixel artifacts. Essence I is sixty-six gorithmic textures compatible with e Forge texture design program, nging from Hex, a simple tiling of exagons, to a complex surface called actal Noise; turbulent, detail-rich for objects like ouds, fire, planets, landscapes, or even dirt.

amples:

unter: a flat texture that applies the image of an LCD display to an obect.

actal Noise: Fractal noise is a turbulent, detailed blend of colors ideal for realistic animated surfaces.

ssence, Volume II $95



er forty new textures. Some examples: Organic surfaces: Natural skins d colorings—turtle shells crusy alien hides. pace textures: Hull plates, s giants and planetary ngs. Animated plasmas. titude textures: Burnished metal, crumpled per, chipped ice, obsidian, cauliflower and ngus. ater effects: Light caustics, ripples, ndrops, expanding droplet waves. Including y 3D flagstones, shingles and snake scales. scellaneous textures: Fibers, foam, and cets.

ence requires an Amiga with a FPU (such as a 68881 or a 68040 CPU). The textures require FORGE to preview and render, though they can be used in Imagine versions 1.0 through 3.0 directly.

APEX

FORGE

FORGE *Included with Essence*

A new program revolutionizing Essence textures. A stand-alone program, Imagine is not necessary. Load/display any Essence texture or attributes, preview in real-time. Interactive edit and preview in color.

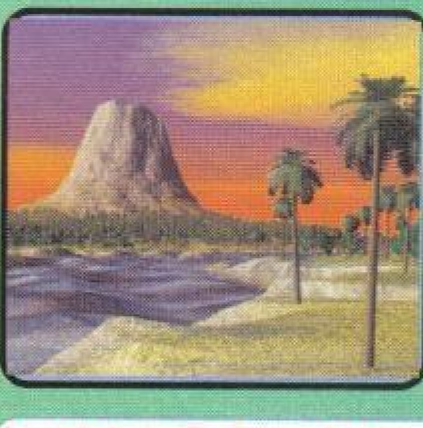
Instead of editing a bank of mysterious numbers in Imagine, quickrendering and displaying an image, then returning to the attribute editor, in Forge the design process is reduced to simply sliding a gadget and watching the change take place!

Forge is more: it is a texture Renderer. It can actually produce antialiased image maps of the textures it displays, saving as IFF24, JPEG, or TIFF, useable in Lightwave, Real 3D, Caligari, Alladin 4D, Playmation, 3D Studio or just about any 3D program.

- Preview up to 9 layers at once
- Load/save Imagine compatible attributes
- Slider control of texture parameters
- Image size not limited by memory
- Seamless repeating images, spherical maps
- [illegible] w modes, full animation. and more.

VISTAPRO

The Ultimate Amiga Creation Tool!



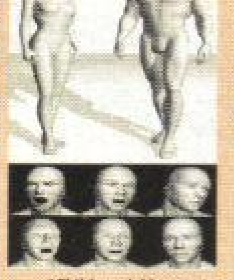
- Create and explore gorgeous real-wor and fractal landscapes and then fly through them!
- Create images that are uniquely your Vista Pro is different from clip art or stock photos
- You define the color, palette, 3-D trees snow level, waves, haze, clouds, lakes, rivers and more!
- Realistic fractal texturing adds amazing detail to your renderings!
- Based on data from the US Geological Surveys and NASA
- Generate left and right images for 3-D devices

Vistapro is also available fo DOS, Windows, and Mac.

Virtual Reality Laboratories, Inc.

$65

Amiga Imagine	Fmt	$180
PC Imagine	Fmt	$180
Lightwave	Fmt	$160
3D Studio	Fmt	$Call



Includes: Man, Woman, Strong Man, Child*, Facial morph targets, Run & Walk scripts, Hand morph targets Can be used in your own commercial productions.

*Child model is sent to registered

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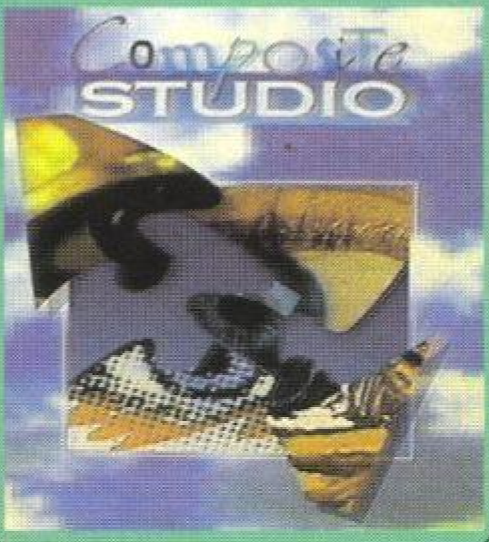
Composite Studio gets your projects done quickly, and with professional results!



Composite Studio $145

For ToasterPaint™ and OpalPaint™

Composite Studio is a powerful user configurable image compositing program. By taking control of ToasterPaint™ or OpalPaint™, Composite Studio allows you to quickly and easily combine. resize, and arrange Framestores or RGBs. Composite Studio is perfect for the video, multimedia, or broadcast professional.

Power Templates:

Using Composite Studio's Power Templates you can choose from 40 predefined templates or quickly create and customize an unlimited number of new templates.

Multi-Level Bevels:

With the click of a mouse your composited images can be surrounded by a multi-level bevel or perhaps choose from one of twenty frame styles including gold, silver, wood, marble, & antique.

Shadows:

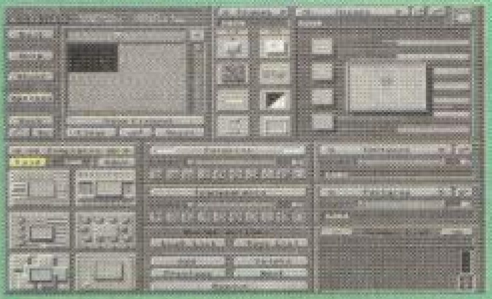
Use the powerful Shadow Button to add a quick drop shadow to any image. Composite Studio lets you pick the shadow angle depth, and darkness.

Easy-To-Use Interface:

With its *Easy-To-Use Interface* Composite Studio is perfect for the beginner yet the powerful customizing features are sure to satisfy the professional. You can easily create your own custom elements such as beveled bars or lower thirds.

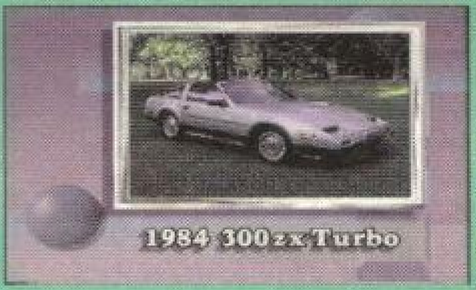
Textures And Fills:

Composite Studio includes textures and fills that can be added to any background, foreground, or custom element. You set the level and Composite Studio will automatically blend your texture with the image you choose. Along with the ten textures and fills included, you can add as many of your own textures as you like.



Batch Processing:

Composite Studio allows you to batch process your finished Framestores and RGBs. Simply set an unlimited number of images up and Composite Studio will render and save them for you.



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- ◆ Tyrannosaurus Rex
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- ◆ Pterodactylus
- ◆ Brachiosaurus

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High Quality model of a Cathedral for Lightwave3D

The Cathedral

Lightwave3D Object Collections: $ 55 Each

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Get All 4 Sets $195

AXIOM SOFTWARE

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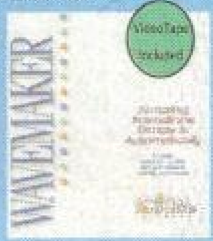
WaveMaker $155

Create professional flying logos. With the included prefabricated animations, add any logo. **Videotape Included:** With the Storyboard feature, show clients previews without rendering every frame.



WaveLink $95

Connects any two Amigas for file sharing and distributive rendering using LightWave or Light Rave. You can even batch render!

Anim Workshop $ Call

AWorks provides tools to create, play, process, edit and add sound to your animations. **Add Sound V.2** supports all AGA modes, Anim5, 7, & 8 formats.

Amprodex, Inc.
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Homes: $95

Four complete, scaled homes for Lightwave. Exteriors, Interior rooms. Doors and windows animated. Over 120 surfaces per home.

Interior Design 1: $45

Over 50 Real-World Scaled Furniture Objects: beds, chairs, cabinets, and more.

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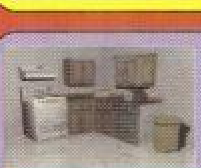
Create rooms and interiors with over 100 Objects: doors, windows, stairs, fixtures, moldings, walls, floors, ceilings and rooms.



Interior Design 2: $45

Over 50 Scaled Kitchen and Bathroom Objects: Lighting Objects, appliances, cabinetry, sinks, vanities, bathtubs, toilets and toiletry, and more. Doors and drawers can be animated!

Interior Design 3: $45

Over 50 Real-World Scaled Office Objects: chairs, desks, book cases, file cabinets, shelves, PC workcenters and more.

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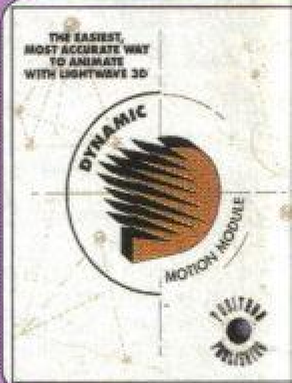
Dynamic Motion Module: $135

Remember the Domino Theory? Dominoes falling in a chain reaction. Imagine trying to animate that scene. Imagine the time and effort of setting all those key frames. " With Positron Publishing's Dynamic Motion Module for Lightwave 3D, that drudgery is gone forever. " DMM makes this and hundreds of other previously impossible motion files a snap—it automatically calculates the key frames, detects the collisions and makes the objects respond appropriately. Think of the time you'll save and how productive you'll become with DMM—*The Easiest Way To Animate With Lightwave 3D.*



SPARKS $95

The First Particle Animation system for LightWave3D 3.0 Now Animators can include "High-End" procedural animation effects to their work. Do in minutes what would take days to set up! Particles bounce with real world behavior with gravity simulation. Multiple point gravity wells allow bending and directing the stream, flock or swarm of particles. Complete with Wind, Gusting, Flaking and Swirling controls adjustable uper axis.

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Cecil Smith is a guide to video and audio technolo
addressing technical issues, including system timin
imaging, audio mixing, more.

Answers To Telvision Technology b
Cecil Smith is a compilation of his answers to ques-
tions posed in his *AV Video* column, and seminars.

Mastering Toaster Technology " by
Brent Malnack and Phil Kurz is the step-by-step

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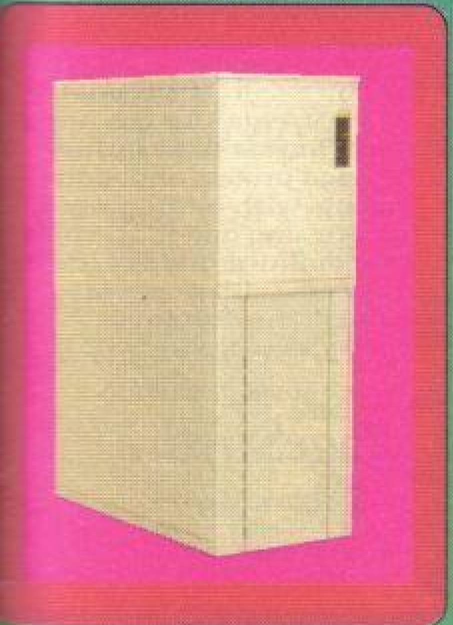
The Most Powerful DeskTop Video System In The World!



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Finally you can enjoy the full power of your Amiga 4000 and transform it into the most powerful Desktop Video System in the world!

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—Desktop Video World

e ready for the Video Flyer!

MicroWave Oven

$395

Slots
PC Slots
Powered Zorro's

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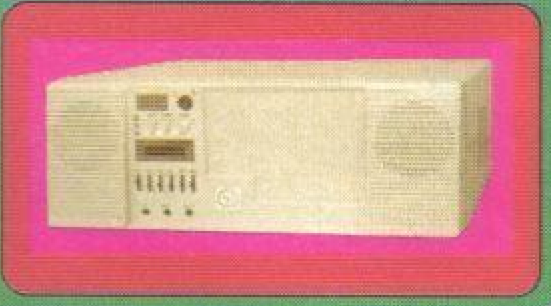
0 Watt Stereo Amplifier
Graghic Equilizer



Prime Image

"The Little Magic Box" $635
Adapts toaster to S-VHS, M II and Betacam component operation.

TBC & SYNC:	
TBC/PCB	$ 895
BC-TBC/PCB (Full-True-Broadcast)	$1395
Standards Converter, TBC & Sync (All-in-One)	$1,595
Options:	
Remote Control	$ 235
U-Matic DUB	$ 150
3-Way Adaptive Comb Filter (for Converter)	$ 475

Passport 4000 **$5,770**

The Passport4000 is a self contained system with built in Standards Converters, TBC's, & Synchronizers which convert the Toaster to PAL in & PAL out TV-standards 2 Inputs, Program and Preview out (all in PAL). Composite and Y/C in and out.

Options:	
Two additional PAL inputs	**$2,850**
3-Way Adaptive Comb	**$ 475**
U-Matic 3/4" DUB Input	**$ 150**

POWER/BOX, Video Expansion Chassis—up to 8 Boards	**$400**
Options:	
Front panel control for 8 boards.	$275
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A4000Toaster Warp System:	**A4000Toaster Oven Warp System:**
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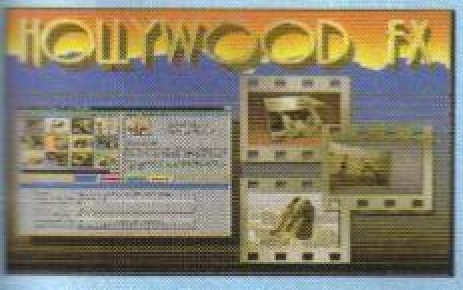

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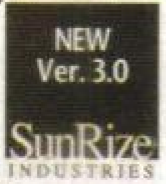

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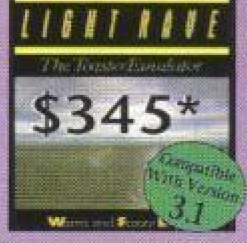

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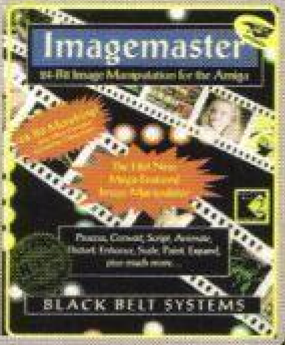

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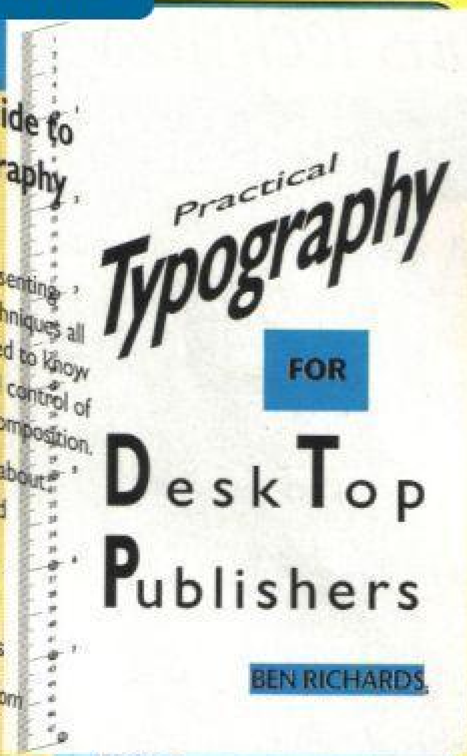

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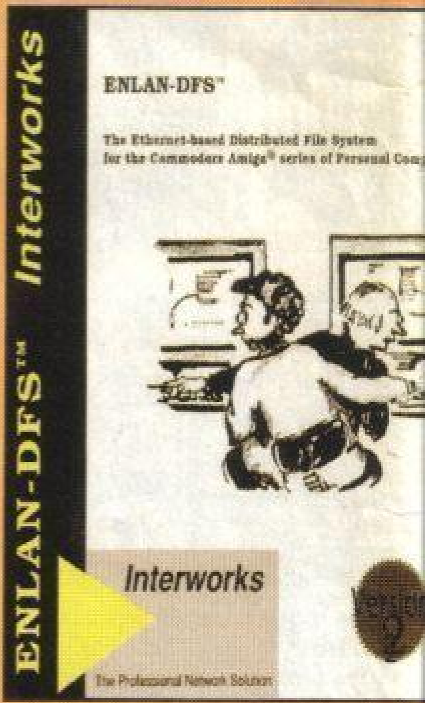
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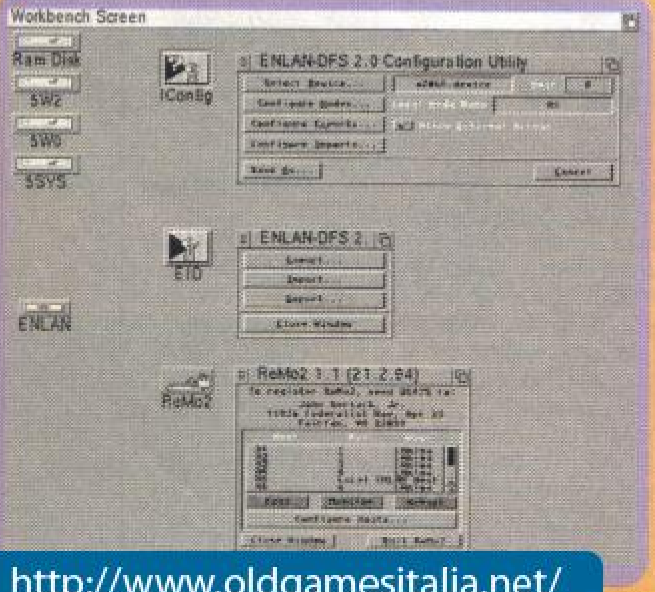

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The WARP ENGINE Is an 040 Accelerator with a High-Speed SCSI-2 controller & up to 128MB of ram expansion, All-In-One!

HARDWARE FEATURES

Very High Speed Local 040 Memory Bus with full 040 burst access.
- NCR 53C710 40MHz SCSI-2 Fast Controller connected directly to the 040.
- 32Bit SCSI host bus DMA interface supporting burst to and from the RAM
- Supports 10MB/s SCSI transfers.
- Full DMA allows the CPU to still have 90% Processing Power while doing Transfers.
- No Zorro III DMA Problems.
- Fully Autoconfigurable with optional Autoboot capability for SCSI.
- 32Bit Ram Expansion Up To 128MB.
- Uses Standard 72Pin SIMM Modules.
- Allows Mixing of Ram Module Sizes.
- Supports 4, 8, 16, 32 MB SIMM Modules.
- Uses the Memory that is installed on the Amiga 4000 MotherBoard.
- Supports DMA access from Zorro III Devices to onboard Memory.
- A3000 Version Supports up to 64MB of 32Bit Memory.
- A3000 Engine will clock 16MHz MotherBoards at 25MHz.

Compatibility
- Compatible with the Video Toaster, Retina Z-III and OpalVision.
- Works in all 3000, and 4000 series Amigas.
- Requires AmigaDos 2.1 or greater.
- Full Two Year warranty

The Warp Engine Series of Accelerators is a break-through in Amiga Expansion design. The Warp Engine comes in three versions for the Amiga/Toaster 4000 and three for the Amiga 3000.

All Warp Engines are fully upgradable to 40MHz by just changing the CPU and the Clock Oscillator!

The Warp Engine uses standard 72 Pin SIMMs (NO CUSTOM SIMMS)and allows the use of up to four different sizes of SIMMs (4, 8, 16 and 32MB) at the same time.

Unlike other companare only available from them, and/or they only allow the same size SIMMs to be installed making it necessary to remove your old SIMMs before you can add larger SIMMs.

The NCR53C710-1 SCSI-II Fast 32Bit DMA Bus Master Processor makes it the Fastest available with its direct connection to the 040 chip—this provides up to 10MB/s Transfers and allows the 040 to retain 90% to 98% of its processing power! Zorro III Memory boards cannot even reach 70% of the speed of the Motherboard Memory while Warp Engines Local 040 Burst Memory is many times faster than the Motherboard Memory!

40 MHz 68040 Accelerator for the VideoToaster/4000

The 4000 Series

The 28MHz Warp Engine comes with an 040 socket, four SIMM sockets and the NCR SCSI-2 Controller. This is a very cost effective entry because the A4000 already has an 040 chip installed and 4 to 16MB of FastRam on the Motherboard. You simply remove the CBM CPU card and then remove the 040 chip and install this onto the Warp Engine. You can also remove the Memory from the Motherboard and install it onto the Warp Engine. This produces a 25MHz 040 Accelerator with 4 to 16MB of High Speed Local 040 32Bit Burst Ram and the fastest SCSI-2 Hard Disk Controller available for the Amiga. You do not need to purchase more FastRam immediately. The Warp Engine provides all of this expansion without using a single Zorro Slot! The 33MHz the 40MHz versions include the 040 Processors. The 33MHz board requires 70ns Ram to work at its highest speed and the 40MHz board requires 60ns Ram although you can insert wait states to use slower Ram.

The 3000 Series: There are three versions available for the A3000 which in all aspects are the same as the 4000 except that the Ram expansion is 64MB.

How Fast Is The Warp Engine?

Rendering Lw3D Texture Example
A4000/040-25MHz: 160 sec.
A4000 Warp 28MHz: 82 sec.- approx. 2x faster
A4000 Warp40MHz: 56 sec.- approx. 3x faster

Warp SCSI-2 Speed:
Using Diskspeed the 2.1 GB Barracuda Drive: Read was 9 MB/sec. with 94% of the CPU still availible.

WARP ENGINE

WARP-3000: 28MHZ	
with a 25MHz 040 CPU	$1085
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with an 040 CPU	$ Call
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0 MB Ram	$1295
with a 4MB 60ns SIMM	$ Call
WARP-4000: 40MHZ	
0MB Ram	$1425
with a 16MB 60ns SIMM	$ Call
with a 32MB 60ns SIMM	$ Call

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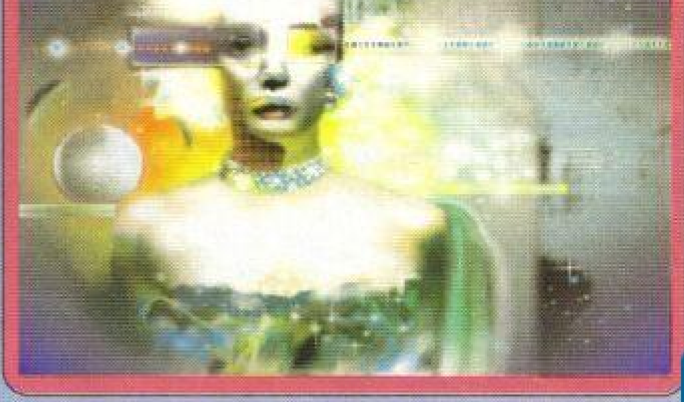
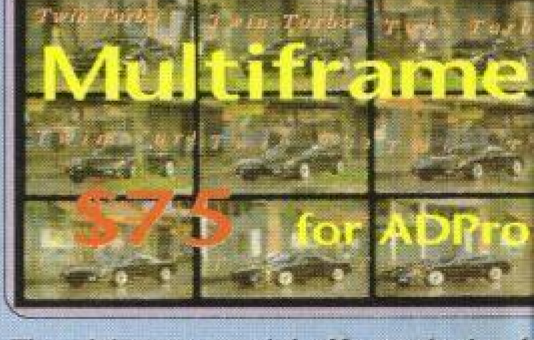


Allows real time manipulation while viewing 24-bit images! TV Paint 2.0 supports many 24-bit display cards such as Retina, GVP IV24, Harlequin. Unbelievable airbrush tool with density, power, and adjustable nozzle settings. Wide support for pressure sensitive drawing tablets. Plenty of brush options including perspective and brush-wrapping tools. Image processing with convolutions include relief, blur and other effects, easy colorizing of b&w images. Support for stencils and spare screen, multiple redo, 8-bit alpha channel. Loads multiple file formats in-



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Circle 166 on Reader Service card.

The plot thickens, with DPaint and Picasso, the Internet and Kermit . . .

HELP KEY

BY TIM WALSH

SCAN-RATE CONCERNS

Q. *I recently purchased an Amiga 1200 and plan to use an SVGA monitor with it. The monitor supports 30-38 KHz and 47-50 Hz modes, which I presume means that it can use only certain display drivers, such as Euro72.*

My first question: Are there any monitor drivers in the public domain that allow the display of lower resolutions on my monitor? Second, is there any software normally opening and operating in the lower screen resolutions that can be forced into higher resolutions of MultiScan and Euro72?

Fred E. Schnarre
Alexandria, Virginia

A. In the case of the AGA-equipped A1200, it's the monitor, not the OS, that determines display limitations. The PD program MONED, by Raul A. Sobon, is just what you need. It allows you to edit and customize the monitor drivers bundled in AmigaDOS 2.0/3.0 to match the signals of older VGA-type monitors.

Upgraded in recent months, the program now offers an Intuitionized interface that makes it easier to use than earlier versions. You'll find it on BBSs and networks, with a recommended shareware donation of $5. For $20, Sobon will send you the source code.

Your second question is a tough one, as a number of variables determine which programs can be set to new screen modes and which cannot. A good rule of thumb is that if a program opens on an AmigaDOS 2.0 or higher Intuition or public screen, it might be configurable to the same resolution of your Workbench. It's safe to say that most programs (games, for example) that employ custom screens are usually locked into whatever screen mode is hard-coded into them.

DPAINT AND PICASSO II?

Q. *I have a 68030-equipped Amiga 2000 and want to purchase a 24-bit display card that would let me run DeluxePaint IV in AGA modes. While MacroSystemUS's Retina apparently works with DPaint, albeit slowly, I'm confused about the Picasso II 24-bit display card. In your review (Jan. '94) you said the card was not compatible with DPaint. However, in the article entitled "24-bit Graphics Boards Revisited" (May '94), you said it does work with DPaint IV. Which statement is correct?*

Jimmy Matthews
Miami Beach, Florida

A. According to NoahJi's, the exclusive US distributor of the Retina, the display card will indeed work with DeluxePaint IV. The software for the board has been upgraded and performs better than earlier versions, but still works rather slowly.

Although I've had plenty of experience with our long-term Picasso II board, I turned to Expert Services, the board's manufacturer. They claim that you're bound to experience some problems in trying to use DPaint on a Picasso II-equipped Amiga. The May '94 article simply states that DPaint works best with the Picasso II, in comparison to other display cards.

On a bright note, Expert Services is working with Electronic Arts to develop a version of DPaint that will address and correct those problems. Trial tests with a beta version of the software have been positive, so stay tuned to find out when the new DPaint is ready.

LASER PRINTER WOES

Q. *After experiencing ToasterPaint problems with my Fargo Primera and offset problems with my HP PaintJet printer, I've narrowed my choices for a new laser printer to either the HP-4 or the HP-4M. Do I need to get custom printer drivers for either of these, or will the drivers included with my AmigaDOS 2.1 software suffice?*

Tony Goulas
Fort St. James, British Columbia, Canada

A. For the most part, the printer drivers bundled with 2.1 work fine with HP printers. The Amiga Roundtable on GEnie lists file #22414, an expanded HP-4 printer driver. There are many others in the public domain, and a great commercial package called Studio Printer (available through NoahJi's for $89) offers a complete collection of popular printer drivers. As you're also a Primera user, you may be interested in Studio Printer DS ($159), a package that contains all the Studio Printer drivers, plus others for the Primera.

DOWNLOAD DISTRESS

Q. *I'm on a VMS system that's connected to the Internet. I retrieve files from an FTP site, then download them using the Kermit-32 protocol (neither Xmodem nor Zmodem seem to work properly) to PC-formatted floppy disks. I later use CrossDOS to copy them to my Amiga.*

Problems arise with DMS-compressed files. When I decompress them, the trackdisk demos and games work fine, but those that create boot blocks for floppies cause system crashes when I try to run them. During downloads, I've tried Fixed, ASCII, and Binary modes to no avail. Do you have any suggestions?

Sean Courtney
Joliet, Illinois

A. Your best bet is to get a faster modem for the Amiga and use that to download your Amiga DMS files. Kermit is a popular transfer protocol on the CompuServe network, but it does "pad" downloaded files with additional bytes of data. I've had the same problem downloading executable Mac files with the Amiga. Regardless of the protocol used, they become corrupted either in the conversion or transfer process and won't execute on the Mac. ■

Send your questions to Help Key, c/o ***AmigaWorld*** *Editorial, 80 Elm St., PO Box 802, Peterborough, NH 03458.*

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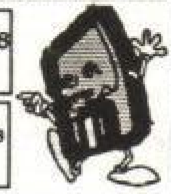

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51	Art Institute of Pittsburgh, **77**
39	ASDG., **25**
151	Better Concepts, Inc., **77**
162	Centaur Development, **CIV**
166	Computer Answers, **75**
77	Copperhead Technologies, **79**
13	Creative Computers, **36-43**
189	De Vine Computer Sales, **61**
42	DevWare, Inc., **62-65**
16	Digital Creations, **7**
26	DKB Software, **13**
64	Fargo Electronics, **5**
74	Global Upgrades, Inc., **79**
*	Graphic Impressions, **77**
*	Hammond Photographic Services, **79**
68	Interactive Digital Devices, **1**
80	J&C Computer Service, **79**
*	Kasara Microsystems, **79**
93	Memory World, **59**
54	NoahJi's, **15**
37	NewTek, Inc., **CIV**
170	Northwest Public Domain, **79**
172	Redmond Cable, **58**
44	Safe Harbor, **51**
191	Select Solutions, **52-53**
45	Sideline Software, **60**
88	Software Hut, **55**
192	Software Support Int'l, **77**
48	Softwood, Inc., **CII**
70	TLAS, **78**
71	Tri State Computer, **57**
159	Utilities Unlimited, **CIII**
86	Visionsoft, **78**

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THE LAST WORD

Kudos, complaints, comments, concerns, and contributions from our readers.

THE LATE LAMENTED . . .

I was shocked when I heard the news about Commodore closing its doors and ending production of the finest computers the world has ever seen. But I must say that after reading the June issue of *AmigaWorld*, I find it hard to believe that a computer that has so much going for it would be snuffed out so easily. I feel something good will come out of this. I'm sure I'm not the only one who would appreciate a clear, level-headed view of what this means to the Amiga/Toaster enthusiast. What do you say, guys?

It is crucial that we continue to support Amiga vendors and magazines such as yours to keep the product development alive for the forseeable future. Folks, there is absolutely no reason to ditch your Amiga system in favor of a PC or Mac just yet. Personally, I plan to keep my Amiga until the silicon breaks down into dust! Commodore may be gone, but the Amiga will live on.

Russell P. Jones
Address unavailable

Well, it has finally happened—Commodore has gone belly up. The big question now is whither Amiga? I took a big leap last December, when I sold my trusty ol' A500 and bought a shiny new A1200. The dealer promised me that Emplant would be out for the 1200 within a month. But will it ever come now?

Can we expect any new software? Are OS upgrades a thing of the past? Some folks have opined that the only future for the Amiga is for Toaster users. But what about us devoted Amigans who don't want to do video?

Most important, will some forward-thinking company buy up the Amiga line? Are the rumors of Sony's interest true? At least, Sony knows how to market its products. Let's hope someone can keep the Amiga afloat!

Tom Knapp
Lancaster, Pennsylvania

So Commodore is dead. But what about all those devoted Amigans? And all those committed third-party developers? It's not like one of those computer markets where interest has just died out. There are still plenty of people actively involved. So how about this:

The Macs and IBMs are going to the PowerPC chip. Commodore was going to go that way, too, but didn't get that far. But what if we just forget about the machines? A PowerPC machine can run on both Mac and DOS/Windows because it doesn't matter what OS. it uses. Why not rewrite the Amiga OS for PowerPC? Then you could buy whatever PowerPC machine you want, get the Amiga OS, and you'd have an Amiga with the latest hardware technology. I'm sure NewTek and others would cooperate with any such endeavor.

Derek Veit
Aberdeen, Scotland

Personally, I plan to keep my Amiga until the silicon breaks down into dust!

I am an Amiga owner concerned about its future in view of Commodore's recent bankruptcy. CBM was in debt to several major companies, one of which might continue to produce the Amiga (there is a strong chance that Hewlett-Packard may be this company). I am interested in starting a movement to influence those companies that depend on the Amiga for a portion of their revenues to advertise, perhaps via an Amiga logo image, in products the Amiga has been instrumental in producing, e.g., Prevue Guide channel, *Babylon 5, SeaQuest, RoboCop*, and other TV programs, as well as advertisements the Amiga has produced or displayed.

If the media were to be blasted with all the places the Amiga impacts the TV, movie, and video industries, it might just give confidence to some company to arrange to continue production of the Amiga.

LeEric Marvin
Atwater, California

NEW COLUMNS

I have read *AmigaWorld* since 1987, and I must say that the latest additions, Denny on DOS, Prime-Time PD, Video in Focus, and CD32 Games are the most refreshing changes I have seen you make. Although I have a stack of AmigaDOS reference guides, I was surprised to learn several shortcuts I did not know. The Denny on DOS column has rekindled my interest and has got me cracking those books once again.

C. Dale Chitwood Jr.
Dededo, Guam

AN OPEN LETTER TO CD32 DEVELOPERS

I think you are ignoring a large segment of the Amiga gaming market: Amiga owners like me who have CD-ROM drives for their machines.

As the owner of an A4000 equipped with a NEC 3Xp drive, I have no incentive to buy a CD32. Why don't you make games that are compatible with other CD-ROM-equipped AGA machines? If you did, I am sure your games would appeal to a far wider audience and make you lots more money.

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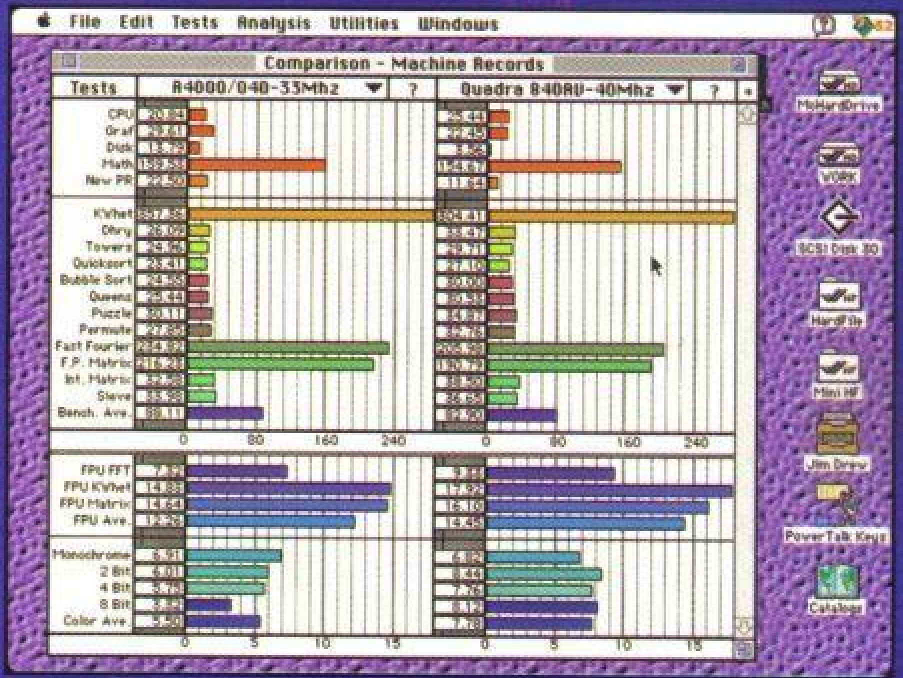
File Edit Tests Analysis Utilities Windows
Comparison - Machine Records
Tests
A4000/040-33Mhz
Quadra 840AV-40Mhz
CPU
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New PR
K'Whet
Dhry
Towers
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Bubble Sort
Queens
Puzzle
Permute
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F.P. Matrix
Int. Matrix
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FPU FFT
FPU K'Whet
FPU Matrix
FPU Ave.
Monochrome
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4 Bit
8 Bit
Color Ave.
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MoHardDrive
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"Speedometer v3.23" speed comparison (68040 CPUs) 33Mhz A4000 vs. 40Mhz 840AV - Hey! That's not fair!

EMPLANT is a hardware device that is designed to allow the emulation of virtually any computer using the Amiga. A simple software driver and ROM(s) from the computer to emulated are all that is required! The hardware holds the key to emulation speed. Custom programmable logic allows the **EMPLANT** hardware to actually become the exact hardware of the computer it is emulating. Multiple emulations of different computers can be ran at the same time using a single EMPLANT board!

Macintosh® Emulation Module

The Macintosh emulation module is a 'generic' Macintosh with the speed of the emulation depending on the processor your Amiga is using. An A3000 is equivalent to a MAC IIci. An A4000 is equivalent to a Quadra 900. Using a 33Mhz 68040 accelerator (such as the RCS Excaliber board), emulation speed can be greater than an 840AV Macintosh! (See speed comparison above)

Support for up to 16 colors is provided for non-AGA machines. A4000 owners can use a full 256 colors! Up to 24 bit (16 million+) colors is supported using 3rd party video boards such as: Picasso II, EGS-Spectrum, Vivid-24, Rainbow II, Rainbow III, Visiona Paint, Merlin, Retina, Retina Z3, Piccolo, EGS110/24, and OpalVision! ...and we'll support any future video boards that are suitable for use with the emulation!

Like **ALL** of the emulation modules that will be released for use with the EMPLANT hardware, the Macintosh emulation module **MULTITASKS** with the Amiga's operating system! You can simply pull down or flip screens and get back to the Amiga side! ...and the emulation stays running at full speed!

Future Emulation Modules

Since the EMPLANT's hardware is so versatile, a completely new and different computer can be emulated by just changing the emulation software patch and the ROM(s). IBM 486DX, Atari 400/800, and Apple IIe/c emulations are in beta testing now! Atari ST, and C64/128 emulations are planned for the future! You need no additional hardware for future emulation modules. All necessary hardware is already built into the EMPLANT board!

Four different versions of EMPLANT are available, ranging in price from $279.95 to $399.95. Order direct from Utilities Unlimited Intl., Inc. or from one of our dealers (more than 200 dealers across the US and overseas carry EMPLANT). US customers, please include $10 for shipping/handling (all orders are sent UPS 2 day delivery). Customers outside North America, please contact Blittersoft: +44 0908 666265 for the dealer nearest you. **Dealer inquires are welcome!**

Utilities Unlimited International, Inc.
790 N. Lake Havasu Avenue #16
Lake Havasu City, AZ 86403 U.S.A.
(602) 680-9004 24hr order line
(602) 453-6407 24hr Fax line
(602) 680-9234 Technical support dept.
(602) 453-9767 24hr BBS (2400-14.4K)
(602) 453-3909 24hr BBS (14.4K-28.8K)

Another Amazing Product From the Makers of EMPLANT!

AMIA

(Amiga<>Macintosh Interface Adapter)

AMIA is a tiny interface adapter that plugs into the last external disk drive connected to your Amiga (or to the Amiga's drive port if no external drives are present), and allows an external Macintosh floppy drive to be used with your Amiga! This interface is ideal for use with EMPLANT's Macintosh emulation module! You can read and write true Macintosh low density (800K) formatted disks and convert them to and from various formats, including full disk images! The design of the AMIA hardware makes it the only Macintosh disk drive interface capable of multitasking with the Amiga's OS! When *MultiOSFileSystem* is released, you will be able to use AMIA to access low density Macintosh floppys right from WorkBench! Price: $59.95

We also have a limited supply of Fujitsu 800K Macintosh compatible external floppy drives for only $129.95!

Circle 159 on Reader Service card.

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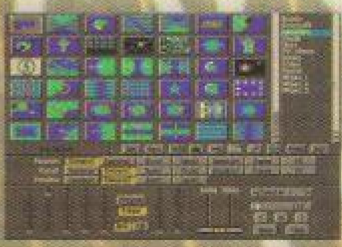

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OpalVision Video Processor

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- Composite in/out
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- RGB output
- OpalVision Video Suite connector

Software:

- OpalVision System Software
- MONTAGE 24
- Opal F/X Edit

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Circle 162 on Reader Service card.

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